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ABSTRACT

Interviews were conducted with 456 Northeastern University liberal arts undergraduate students to ascertain their perceptions of personal change due to college experiences, career attitudes and expectations, social and humanistic attitudes, and student voluntary activities. Two-hundred and ninety-three of the students had either participated or planned to participate in the cooperative education program. The remaining 163 students had neither participated nor planned to participate in the program. These students served as a control group. The output data indicates: (1) that cooperative education students in contrast to others perceive greater personal change since entering college, particularly in the area of career development; (2) there is a consistent and clear trend within the cooperative education group to perceive greater personal change as they progress; (3) the most important agent of change for both groups was perceived to be general maturity, with work experience becoming increasingly important for the upperclass cooperative education student; (4) as freshmen, more cooperative students were unsure of their career goals; (5) cooperative students put a high priority on career establishment and, by contrast, the noncooperative students put a high priority on personal well-being; (6) the attitudes of both samples of students towards people is generally positive; and (7) although the social and humanistic attitudes of the cooperative students are similar to their noncooperative peers they evidence more conservative, cautious, and prudent judgment. The overall evidence is that the cooperative work experience has a considerable impact upon student development during the college years, particularly in the area of career development. Interview questions are listed in an appendix. (DMT)

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Impact of Cooperative Education upon Personal Development and Growth of Values:

Final Report to The Braitmayer Foundation

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Preface

In an address to the participants of the National Conference on Cooperative Education held in 1972 President Asa S. Knowles of Northeastern University said, "Cooperative education, established soon after the turn of the century as a means of introducing the student to both work experience and academic study during his college years, is fast becoming one of the new looks in higher education. For cooperative education the time and the idea have met." The truth of this assertion comes forcefully to mind when one considers that in 1970, 64 years after the first cooperative education program was initiated, fewer than half of the present 775 known programs were in existence.

With this very rapid growth many questions have arisen which can be answered only after careful study and research. One of those questions has to do with the impact of cooperative education work experience upon the personal growth and values of students. The research herein reported addresses itself to this question.

The research was made possible by a grant to Northeastern University by the Braitmayer Foundation. Sincere and grateful appreciation is extended to the Foundation and to Mr. James Fraser.

I wish also to give special thanks to Miss Ruth Bork who is a research assistant in the Cooperative Education Research Center. She coordinated much of the data collection and analysis. Preceding Miss Bork as research assistant was Mr. Christopher Pratt who left the Center for the greener pastures of directing a new cooperative education program. His early assistance in field testing our interview guide and organizing our staff

of interviewers was and is greatly appreciated.

During the data collection period and the beginning of our analyses we had two graduate assistants from the University's Graduate School of Education work part-time. These were Mr. Frederick Barton and Ms. Annette Roth. Their assistance was considerable.

Twenty-three cooperative education coordinators, assistants to coordinators, research assistants and graduate students in counselor education conducted the 456 interviews upon which this research is based. Their assistance was essential and deeply appreciated. They were the following people: Frederick Barton, Boreslaw P. Berestecky, Beverly Bernstein, Ruth Bork, Jean Burns, Richard Canale, Carol Coleman, Ellen Duwart, Janice Firestein, Sara Frost, Marcia Gloddy, Jane Goring, Anita Green, Frank Heuston, Joseph Marrone, Karen Nezvesky, Christopher Pratt, Richard Robak, Annette Roth, Anthony Rotundi, Nancy Stetson, Ellen Wayne, and Katherine Wilson.

Finally, I want to thank those 456 students who voluntarily gave their time to give us information. Without their cooperation there would have been no study.

James W. Wilson

Boston
July 1, 1974

ABSTRACT OF RESEARCH

Interviews were conducted with 456 Northeastern University Liberal Arts undergraduate students. These students were distributed across all classes, freshman through senior. Two hundred and ninety three of the students either had had one or more cooperative education work experiences or indicated their intent to participate in the cooperative education program. The remaining 163 students neither had nor intended to participate in the program. For the purposes of the research these 163 students served as a control group so that the impact of cooperative education work experience might be studied.

The two samples of students were found to differ, first of all, with respect to sex, age, and social class characteristics. It could not be determined from this research but it seems reasonable that these differences in input data have import for understanding fully the results of outcome data.

The outcome data collected were student perceptions of changes that had occurred to them since entering college and the agents of perceived changes, career attitudes and expectations, social and humanistic attitudes, and student voluntary activities.

The principal findings of the research are listed below:

1. Cooperative education students, in contrast to those students not participating in the program, perceive greater personal changes since entering college, particularly in the area of career development.

2. There is a consistent and clear trend, inferred from the results of comparisons across classes, within the cooperative education group to perceive greater personal change as they progress from freshman to senior.
3. The most important agent of change for both groups was perceived to be general maturity, but almost as important for the cooperative sample, but not the control sample, was work experience. Work experience became increasingly important for the upperclass cooperative education student.
4. As freshmen, substantially more cooperative students were unsure of their career goals. As upperclass students, they did not differ from the non-cooperative students with regard to having made a career decision but they more frequently selected non-service careers.
5. Cooperative students put a high priority on career establishment. By contrast, the non-cooperative students put a high priority on personal well-being.
6. The attitudes of both samples of students toward people generally, minorities, women and society-as-a-whole were very similar. Essentially, they think positively of people and trust them, recognize the existence of discrimination against minorities and accept the need for concerted efforts to solve racial problems, believe that women should be treated equally and view our society as too materialistic.
7. Although the social and humanistic attitudes of the cooperative students are similar to their non-cooperative peers, they evidence more conservative, cautious and prudent judgment. This was

interpreted as a consequence of their involvement in practical, adult work experience. This is especially the case in situations that might affect their own career prospects.

8. The overall evidence is that the cooperative work experience has a considerable impact upon student development during the college years, particularly in the area of career development.

CHAPTER ONE

Introduction to the Study

Cooperative education is a strategy of education which incorporates work, to be performed by students, as an integral part of the curriculum. Insofar as higher education is concerned, the first institution to adopt this scheme of education was the University of Cincinnati. That occurred in 1906. It was called cooperative education because the plan necessitated that cooperative arrangements between the employing firm and the school be established.

The fifteen years following the implementation of the first program saw the establishment of nine additional ones. Like Cincinnati's, all of these existed within engineering curricula. The first cooperative education program in a curriculum other than engineering was developed in 1919. The curriculum was business and the institution was, again, the University of Cincinnati. Antioch College was the first totally liberal arts college to adopt the cooperative education plan. They did so in 1921. It was 1932 before another liberal arts college embraced the idea of cooperative education. This was Bennington College in Bennington, Vermont. In 1935 Northeastern University established its College of Liberal Arts and incorporated its plan of cooperative education, begun in 1909, in the curriculum design. The one modification from programs in other colleges of the University was the optional character of the Liberal Arts program. All colleges created prior to and subsequent to the College of Liberal

Arts require students to pursue their curricula on the cooperative plan.

Research has documented a number of values that can accrue to students who follow the cooperative education plan. Its value in assisting students to prepare for careers has been well demonstrated. Studies have shown, for example, that cooperative work experience provides a useful source of career information, presents students with excellent opportunities to test their interests and aptitudes for possible careers, and provides a realistic orientation to the world of work (Fram, 1964, Mosbacker, 1957, Smith, 1944). Other studies, which compared cooperative students and graduates with their counterparts from traditional programs, showed clearly the contributions of cooperative education in career preparation (Baskin, 1954, Wilson and Lyons, 1961).

A number of these studies also demonstrated the value of cooperative work in developing skills and attitudes essential to effective interpersonal relationships (Mosbacker, 1957, Smith, 1944, Wilson and Lyons, 1961). Studies by Lindemeyer, 1965, Smith, 1965, and Stark, 1965 showed the academic values of cooperative education. These studies compared cooperative and traditional studies and reported less attrition and higher grade averages for the cooperative students. Observations, mostly of an informal nature, also make the point that involving students in work helps in the maturing process. By this is meant that students become more independent and become more responsible.

There is no question that cooperative education has merit as an educational strategy, that important values can accrue to students who participate in cooperative education. Research has not, however, examined all the potential outcomes and implications for students involved in cooperative education. Systematic study of potential impact of cooperative work ex-

perience on student social and humanistic attitudes has not been undertaken. To do this was the purpose of the research herein reported.

Practically all institutions of higher learning exist to help young people to develop in three important and interrelated ways. They may put greater or lesser emphasis upon one or another but to some degree they assume responsibility to assist students in all three ways. First, they are responsive to student needs for career development, to help students achieve knowledge, understanding, skills, and attitudes essential to make wise career decisions. Second, they seek to help students to grow as unique and worthwhile human beings, to become independent of parental and adult judgments and to develop their own identities. Third, institutions are concerned with the social development of their students, aiming to have them become aware of and responsive to the needs and problems of the society of which they are a part and to learn to relate to others effectively. This research to some degree examines each of these areas as possible college experience outcomes.

It is important to the full understanding of the findings of this research to see Northeastern University's place within the context of these institutional functions. The University was created in response to the needs of people for specialized career-directed knowledge and skills. Its principal constituency has always been young people from working class families who seek education for career preparation. It was within that context that the University began its own program of cooperative education in 1909. The major focus of that program has always been to further the career development of students.

Seven of the University's basic colleges are professional curricula: Business; Boston Bouvé (physical and recreational education); Criminal Just-

ice; Education; Engineering; Nursing; and Pharmacy. Students in each of these colleges, at the time of arrival on campus, have made a fairly strong commitment to a professional career. Classroom experience and cooperative education work experiences focus upon the student's growing competence in that field, upon his growing understanding of the characteristics and opportunities in that field, and upon his understanding of himself and his potential in relationship to that field.

In the College of Liberal Arts there are points of similarity and points of difference from the situation just described. The major difference is that students, while making a tentative decision regarding a field of study, have very less often made a decision regarding a career. For the most part the curricula are preparatory for graduate study, not for professional employment. On the other hand, the situation in Liberal Arts is like that of the other colleges in that the basic orientation of the cooperative program is to assist students in their career decisions. The cooperative program is used by students as a device for the exploration of career possibilities.

DESIGN OF STUDY

A cross sectional method was used to compare the attitudes and values of students pursuing their undergraduate education on the cooperative plan with students not participating in the plan. The students from the College of Liberal Arts were selected for this research because it is the only college at Northeastern University in which undergraduate students have the option to participate or not in the cooperative education program, and hence it is the only college which provides opportunity to directly compare students having participated in the cooperative education program with students

who have not. The two study groups were composed of students randomly selected from each class, freshman through senior.

It was intended that there be 50 students per class for both study groups. Hence, it was planned that a total of 450 students, 250 cooperative and 200 non-cooperative, would participate in the research. As it happened, this plan could not be strictly followed. First, in selecting freshman students there was no way of knowing in advance whether they intended to pursue the cooperative plan or not. The cooperative experience is not actually begun until the sophomore year. A sample of 105 freshman students participated in the study; 69 per cent indicated their intention to register in the cooperative program and were thus included in the cooperative sample. Among the upper classes, over-sampling to help achieve the sufficient total sample size, combined with a relatively easy task of recruiting cooperative education students and a substantially more difficult time recruiting non-cooperative education students, led to discrepancies from the desired numbers. The final samples obtained are given below:

	Fr.	So.	Middler	Jr.	Sr.	Total
Cooperative	71	51	55	55	61	293
Non-cooperative	34	35	--	44	50	163
Total	105	86	55	99	111	456

The research data for the project were obtained from students by means of interviews. The interview schedule (see Appendix A) was constructed specifically for the research. Most items were especially written for this purpose but a substantial portion of the schedule was constructed by incorporating items and scales used in other research.[1] The dimensions of the

[1]Katz, Joseph. Growth and Constraint in College Students, A Study of the Varieties of Psychological Development, 1967; Robinson, James P. et. al., Measures of Political Attitudes, Survey Research Center, Institute for Social Research, University of Michigan; Pace, Robert C. Higher Education Measurement Kit, Center for Study of Evaluation, Graduate School of Education, University of California, Los Angeles.

interview schedule are as follows:

A. Background Information

1. Sex
2. Age
3. Home
4. Education of parents
5. Occupation of parents
6. Socio-economic characteristics

B. Status at Northeastern University

1. Class
2. Major
3. Enrollment in cooperative education program
4. Number and kinds of cooperative work experiences

C. Outcomes of College Experiences

1. Career preparation
2. Personal identity
3. Social skills
4. Interest in new learning
5. Thinking

D. Attitudes and Values about People and Society

1. Ethnocentrism
2. Societal problems
3. Minority problems
4. Role of women

E. Activities and Interests

1. Literature
2. Religion
3. Music
4. International and intercultural affairs
5. National and state politics

The first edition of the schedule was field tested by interviewing 25 students and research graduates of the University. Revisions were made based upon the experiences gained. Twenty-one interviewers conducted the 456 student interviews. All interviewers were in some way connected with the Division of Cooperative Education of Northeastern University: coordinators, assistants to coordinators, research assistants, and graduate interns.

CHARACTERISTICS OF THE STUDY SAMPLES

For the purpose of this research an operational distinction has been made between input and output data. Input data include such factual information as the sex and age of the student participants. On the other hand, output data include attitudes and values held by the participating students and their perception of outcomes directly related to their educational experiences. The input data or sample characteristics included in this study are as follows: sex; age; home location; family background data; and selected major.

Sex

Fifty-seven percent of the total sample of 456 students was male. As the data of Table 1.1 shows, however, the discrepancy between the proportion of males and females in the cooperative and non-cooperative samples is significant (X^2=14.167, P is less than .01). This sample imbalance was checked

TABLE 1.1

COOPERATIVE STUDY SAMPLES BY CLASS AND SEX

	Cooperative			Non-cooperative			Total Samples		
Class	Total	Male	Female	Total	Male	Female	Total	Male	Female
Freshman	71	57.7	42.3	34	52.9	47.1	105	56.2	43.8
Sophomore	51	47.1	52.9	35	60.0	40.0	86	52.3	47.7
Middler	55	69.1	30.9	--*	--*	--*	55	69.1	30.9
Junior	55	74.5	25.5	44	36.4	63.6	99	57.6	42.4
Senior	61	69.8	31.2	50	36.0	64.0	111	54.0	46.0
Total	293	63.5	36.5	163	44.8	55.2	456	56.8	43.2

*There is no "middler" class for the non-cooperative sample.

against the proportion of males and females in the cooperative and non-cooperative populations in the College of Liberal Arts. These percentages are as follows:

	Cooperative Population	Non-cooperative Population
Male	59.1%	52.7%
Female	40.9%	47.3%

The difference in the percentage of males and females in the two population

groups is also statistically reliable (X^2=6.900, P< .01). Hence, the populations of cooperative and non-cooperative students within the College of Liberal Arts are similarly unbalanced. Fewer women students participate in the cooperative education program.

Two additional tests were made to test the comparability of the study samples with the population. The number of men and women in the total Liberal Arts population were first compared with the cooperative sample and then with the non-cooperative sample. The resulting Chi Square values were, respectively, 1.637 and 3.065. The probabilities associated with these values are: greater than .10 and less than .10. The discrepancies between the non-cooperative sample and the population approach statistical significance. This suggests the possibility of some under-sampling of males in the non-cooperative sample, but it is clearly not a serious undersampling. The main fact to be concluded from these data is that more male students opt for participating in the cooperative education program than do female students.

Age

Information relating to the age of the two study samples by class is given in Table 1.2. The entries in italics represent the modal ages.

TABLE 1.2

STUDY SAMPLES BY CLASS AND AGE

	Cooperative					Non-Cooperative			
Age	Fr.	So.	Md.	Jr.	Sr.	Fr.	So.	Jr.	Sr.
17	5.6					8.8			
18	*76.1*	3.9	1.8			*52.9*	2.9		
19	18.3	*68.6*	7.3			20.6	*45.7*	2.3	
20		13.9	*70.9*	16.4	1.6	5.9	40.0	*47.7*	6.0
21		7.8	12.7	*58.2*	18.0	2.8		31.8	*52.0*
22		3.9	1.8	18.2	*63.9*	2.9	2.9	4.5	24.0
23			1.8	5.5	14.8		2.9	9.1	2.0
24+		2.0	3.6	1.8	1.6	5.9	5.7	4.5	16.0

The examination of these data show that the modal ages of the cooperative students, freshmen through seniors, are 18-22, and for non-cooperative students are 18-21. This is as would be expected, since the cooperative education program is five years in length and the non-cooperative program is four years. Closer examination of these data, however, show in fact that on the average the non-cooperative students are somewhat older than the cooperative students. Given in Table 1.3 is the percentage for both samples of students in each class older than the modal age for that class.

TABLE 1.3

PERCENTAGES OF EACH CLASS FOR COOPERATIVE AND NON-COOPERATIVE SAMPLES OLDER THAN THE MODAL AGE OF THAT CLASS

Modal	Cooperative Sample					Non-cooperative Sample			
Age	Fr.	So.	Md.	Jr.	Sr.	Fr.	So.	Jr.	Sr.
18	18.3					38.3			
19		27.5					51.4		
20			19.9					50.0	
21				25.5				(18.1)	48.0
22					16.4				(18.0)

For example, within the cooperative sample 18.3 percent of the freshmen are older than the modal age of 18. On the other hand, 38.3 percent of freshmen in the non-cooperative sample are older than 18. The difference between these two percentages is statistically reliable, as is the difference between the percentage of sophomores over the modal age of 19, of the difference between cooperative middlers and non-cooperative juniors over the modal age of 20, and of the difference between cooperative juniors and non-cooperative seniors who are the modal age of 21. For both juniors and seniors in the non-cooperative sample, the percentage of students over the modal age for the corresponding classes in the cooperative sample are shown. Thus there are 18.1 percent of the non-cooperative juniors and 25.5 percent of the cooperative juniors over the cooperative junior modal age of 21. The difference between

these two percentages is not statistically reliable, nor is the difference between the cooperative and non-cooperative senior students. The conclusion to be drawn from these results is that on the average cooperative students as they enter Northeastern University in the College of Liberal Arts are somewhat younger than their non-cooperative counterparts, and that there is no very great difference in their ages at graduation even though cooperative students are in college an additional year. To further make this point, the arithmetic mean for the two groups of seniors was calculated. The average age of the cooperative seniors was 21.97 and for the non-cooperative seniors was 21.70. The difference in these two means is not statistically significant.

Where the Students Come From

Sixty-two percent of the combined study samples come from Massachusetts; an additional ten percent come from the other New England states; and twenty-four percent come from the mid-Atlantic states of New Jersey, New York, and Pennsylvania. Hence, 96 percent of the two study samples come either from the New England states or the mid-Atlantic states. Comparison of the cooperative sample with the non-cooperative sample shows that 66.9 percent of the cooperative students, in contrast to 53.4 percent of the non-cooperative students, come from Massachusetts. The Chi Square value of these proportions is 8.178 and is significant at the one percent level of confidence. Further, of those cooperative students not coming from Massachusetts, 34 percent come from the other 5 New England states. Only 18.4 percent of the non-cooperative students not coming from Massachusetts come from the other New England states. The difference here is also statistically significant ($\chi^2=5.241$, $P< .05$).

The data given in Table 1.4 summarize where students of the two study samples live while attending the University. Not surprisingly, based upon

the previously given data, there is a statistically reliable difference ($X^2=7.760$, $P<.05$) with regard to the percentage of cooperative and non-cooperative students living at home, living in University dormitories, and

TABLE 1.4

RESIDENCE OF STUDY SAMPLES

Residence	Cooperative	Non-cooperative
Home	41.3%	29.6%
Dormitory	23.2	26.5
Off-Campus Housing	35.5	43.8

living in off-campus housing. The essential conclusion to be drawn from these data is that substantially more of the University's College of Liberal Arts students opting to participate in the cooperative education program are commuting students.

Socio-Economic Characteristics

The measure used for predicting social class position in this research is based upon the occupation of the father or head of household and an estimate of social class position made by the respondent. In Table 1.5, data are presented regarding occupations held by the fathers of the students participating in the research. Although there is a full distribution of membership in each

TABLE 1.5

OCCUPATIONS OF THE FATHERS OF STUDENTS IN THE STUDY SAMPLES

Occupation		Cooperative	Non-cooperative
Executive, professional	(1)	19.1	32.5
Managerial	(2)	16.0	18.4
Semiprofessional	(3)	18.4	17.2
Clerical, technical	(4)	18.8	11.7
Skilled	(5)	10.9	7.4
Semiskilled	(6)	5.5	3.1
Unskilled	(7)	3.1	1.8
Unemployed, not living		8.2	7.9

of the seven occupational areas, there is a somewhat larger percentage of students in the non-cooperative sample whose fathers are either executives, high-level professional persons, or managers of businesses and corporations than is the case for the cooperative sample. If these two occupational categories are considered to be high-status categories and the remaining, for sake of analysis, are considered to be low-status categories, then 38.3 percent of the students in the cooperative sample report high-status occupations for their fathers, whereas 55.3 percent of the non-cooperative sample report high-status positions. These data yield a Chi Square value of 11.314 (P is less than .01) and hence there is a statistically reliable difference in the percentage of cooperative and non-cooperative students whose fathers hold high-status positions.

A statistically reliable difference can also be found between the estimates of cooperative and non-cooperative students regarding their own social class membership. Data relating to these estimates are found in Table 1. 6.

TABLE 1.6

ESTIMATE OF SOCIAL CLASS POSITION BY STUDY SAMPLES

Estimated Social Class		Cooperative	Non-cooperative
Upper	(1)	1.7	3.1
Upper Middle	(2)	21.5	35.6
Middle	(3)	43.0	36.8
Lower Middle	(4)	16.0	8.0
Working and Lower	(5)	16.4	12.9
Lower	(6)	1.4	4.6

Once again, there is a full distribution of responses from an estimate of upper class membership to working and lower class membership. Once again, however, a somewhat larger percentage of non-cooperative students estimate

their membership as being higher than the estimates of cooperative students. If these data are simplified as were the data regarding the occupations of fathers, and considering upper and upper-middle class membership as high-status, then 23.2 percent of the cooperative students estimate their social class in the high status categories. At the same time, 38.6 percent of the non-cooperative students estimate their social class position in the higher categories. The Chi Square resulting from these data is 12.240 (P is less than .01) and hence, it is clear that non-cooperative students position themselves in a higher status level than do cooperative students.

The actual social class scale consists of combining the information on father's occupation and estimated social class position. In both Tables 1.5 and 1.6, there are numbers in parentheses following the categories. Each individual obtains a social class score by adding together his father's occupation score and his estimated social class score. The range of possible scores on this social class measure is from a low of 2, which would be the highest possible measure of social class, to 13, which would be the lowest possible social class position. Data summarizing the social class score for study groups is given below. As might be expected, based upon

	Cooperative	Non-cooperative	Difference	t-value
Mean	4.25	3.33	.92	3.39
Variance	6.662	7.286		

the earlier data presented, there is a statistically significant difference in the social class scores of the two study groups. In general, students making up the cooperative education sample, while coming from all social strata of our society, come somewhat more from the lower social classes than do non-cooperative education students. It is noteworthy that in a 1961 report of a national appraisal of cooperative education, one of the major findings reported was that while students pursuing their college educations

by means of the cooperative education plan come from all of the social classes as do their non-cooperative counterparts, substantially more of them come from the lower and working classes of our society (Wilson and Lyons).

Academic Majors

During the course of the interview, students were asked to indicate their current selection of academic majors. These data are summarized in Table 1.7. There is considerable similarity in choices of major by the study

TABLE 1.7

CURRENT MAJORS OF STUDY SAMPLES

Major	Cooperative	Non-cooperative
Behavioral Sciences	35.8	35.6
History, Political Sciences	31.7	31.9
Humanities	11.9	20.2
Economics	9.9	4.3
All others	10.6	8.0

groups. The percentages selecting behavioral sciences and history and political science are virtually identical. There are two differences which are of statistically significant proportions: the percentage of students selecting majors within the humanities; and the percentage of students selecting economics. Whereas a substantially larger percentage of non-cooperative students have elected majors within the broad field of humanities, a significantly larger proportion of cooperative students have elected economics.

In addition to being asked what their major is, students were asked if they were sure that they had selected the correct major for them at the time of selection. While 61.4 percent of the cooperative students indicated that they were sure they had chosen the correct major, 69.9 percent of the

non-cooperative students stated that they were sure. The difference in the percentage of students indicating that they were sure of having chosen the correct major approaches statistical significance ($X^2=3.01$, $P< .10$).

SUMMARY

The data presented in this section have compared the two study samples with regard to a number of input kinds of information. The cooperative sample in comparison with the non-cooperative sample has the following characteristics: (1) it is composed of more males; (2) its constituency during the earlier undergraduate years is younger and because of the additional year of the cooperative program tends to be almost the same age at time of graduation; (3) its constituents come from Massachusetts and the other New England states; (4) it generally comes from the lower socio-economic classes; and (5) it selects about the same majors as its non-cooperative counterparts, with the exception that it selects humanities majors less frequently and economics as a major more frequently.

CHAPTER TWO

Change And Agents Of Change

The preceding chapter presented input data for the study samples. This and the following chapter will focus upon outcome data. Our concern is the examination of possible differential effects of work and non-work educational strategies upon undergraduate liberal arts students. The content areas of this examination are career, social, and humanistic attitudes held by students. This chapter will consider student perceptions of personal change due to their college experiences. The following chapter will summarize student attitudes toward other persons and society, and student activities, considered as an overt extension of their attitudes.

The research problem to be faced in these examinations of outcome data is, essentially, one of finding if reliable associations between educational strategies and attitudes exist. To obtain reliable measures of association is not especially difficult. For the kinds of data collected, the Chi Square statistic has proven to be quite acceptable. Difficulty, however, arises in interpreting results: is the association solely or even primarily between the two variables under study, in this case work and attitude, or is some other "hidden" factor operating? The technical question is whether or not work is the effective independent variable. There are two principle sources of potential confounding in this research. First, there are background differences between the study groups. It is entirely possible that observed attitudinal differences between the groups are due more to their differences in social class membership than to the

fact that one group had cooperative work experiences and the other did not. Second, there is a considerable problem of possible maturation influence. For example, in a specific test of maturation effect, many of the attitudes under study showed clear association with graduating class membership.

While indications of relationship between maturity and attitudes are in themselves important, the focus of this research is upon the effects of introducing work as an educational strategy upon those attitudes. To study the possible effects of this strategy, influence of maturation must be neutralized or held in abeyance. That this is necessary is demonstrated by the following analysis of the study samples in which class membership and participation in at least one cooperative work experience were used as the classification criteria.

		Freshman	Sophomore*	Junior	Senior*
Work	No.	0	18	78	90
	%	0.0	9.7	41.9	48.4
NonWork	No.	105	68	48	49
	%	38.9	25.2	17.8	18.1

It is obvious from these data that measures of association between work and attitudes might in reality be measures of association between maturity and attitudes. The reasons for this discrepancy in the class distributions of work and non-work students are: (1) no freshman students, whether or not they plan to participate in the cooperative education program, have had a cooperative work experience; and (2) at the time the interviews were conducted only 18 of the 51 cooperative education sophomores had had a work experience.

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* For purposes of this analysis the cooperative education juniors were distributed evenly between the middler and senior classes.

To cope with this problem for the study of the possible influence of work on attitudes two study groups were "constructed". This was accomplished by eliminating from subsequent comparative analyses all freshman and by selecting randomly a sub-sample from the sophomore non-work sample which would constitute nine percent of the total non-work study group. This procedure produced the following study samples.

		Sophomore	Junior	Senior
Work	No.	18	78	90
	%	9.7	41.9	48.4
NonWork	No.	10	48	49
	%	9.3	44.0	45.8

The adjustment, of course, in no way eliminates the influence of maturity upon student attitudes. It does, however, control that influence in order that possible influences of work upon those attitudes may be examined.

Personal Changes Since Entering College

The point of any educational effort is student development and the essence of development is behavioral change. In this context behavior is conceived in its broadest terms to include cognitive, affective and psychomotor functions. Thus the behavior to be changed through educational effort may be intellectual, as for example, the acquisition of knowledge or the development of communication skills. On the other hand, the student may develop typing skills, proficiency in the operation of a turret lathe, or other psychomotor skills. Finally, the behavioral change may be affective, such as developing new interests, modifying attitudes, or shifting values.

In terms of development, a significant concomitant of behavioral change is awareness of that change. Part of the process of development

is the reorganization of the self, taking account of new knowledge, skills and attitudes. Hence, practically as important as the change itself is the individual's awareness that change has occurred. For this reason students were asked to report the extent to which they felt they had changed since entering college with regard to a number of cognitive and affective areas.

Tables 2.1 and 2.2 categorize items according to percentage of students reporting moderate to considerable change since entering college. Table 2.1 lists those items for which both the work and non-work groups fall within the same percentage category.

Over ninety percent of the students in both the work and non-work groups report having changed at least moderately in intellectual areas. Specifically, the vast majority report change since entering college with respect to their general thinking skills and in the development of interest in intellectual pursuits and in new fields of learning. The items within the 81-90 percent category stand in some contrast to the 91-100 percent category. Four of the five items concern matters of personal development: self confidence; personal efficiency; independence; sense of identity. The fifth item in the category concerns development of social skills.

Most of the items in the remaining categories are particular instances of intellectual skills and interests: terminology and facts in various fields of knowledge; broadened literary acquaintance and appreciation; understanding of the nature of science. Three other substantive areas of change, however, are found within these categories: moral views, development of friendships, and religious views. Only 31-40 percent of the students reported changes in their religious views since entering college.

TABLE 2.1

PERCENTAGES OF WORK AND NON-WORK STUDENTS REPORTING CHANGE SINCE ENTERING COLLEGE FOR SPECIFIC ITEMS, BOTH WORK AND NON-WORK GROUPS IN SAME PERCENTAGE RANGE

Percentage of Work and Non-Work Students Reporting at Least Moderate Change	Item
91-100%	- Intellectual interests - Development of an interest in new fields of learning - Development of general thinking skills
81-90%	- Freedom to express your thoughts and feelings - Efficiency as a student - Appreciation of individuality and independence of thought and action - Development of an identity and sense of self-confidence - Development of social skills
71-80%	- Vocabulary, terminology and facts in various fields of knowledge - Ability to see relationships, similarities and differences between ideas - Moral views
61-70%*	- Broadened literary acquaintance and appreciation - Development of friendships and loyalties of lasting value
51-60%*	- Background and specialization for further education in some profession, scientific or scholarly field
41-50%	- Religious views
31-40%	- Understanding the nature of science, experimentation and theory - Appreciation of religion...moral and ethical standards

* A statistically reliable difference between the percentage of work and non-work students reporting at least moderate change exists. In both instances a larger percentage of non-work students reported change.

In two instances, although the percentage of work and non-work students reporting change were in the same category, a statistically reliable difference between the two groups exists. Seventy percent of the non-work and 63 percent of the work students reported at least moderate change since entering college with regard to broadened literary acquaintance and appreciation. The real basis of the statistically reliable difference, however, is not between change and no change but between moderate change and great change. Thirty-six percent of the non-work group and 24 percent of the work group report the change to be great. The same situation exists with regard to the other item showing a difference between the two study groups: background and specialization for further education in some profession, scientific or scholarly field. Fifty-four percent of both groups report at least moderate change. But, 24 percent of the nonwork group and only 15 percent of the work group indicate the change was considerable.

There are seventeen items for which both study groups fell into the same categories of percentage of students reporting change. There are 16 additional items for which the groups are in different percentage categories. In 13 instances the work group is in a higher percentage category than the non-work group. These data are summarized in Table 2.2.

For six of these sixteen items the differences between the percentage of work and non-work students reporting at least moderate change since entering college is statistically significant. In five of these a larger percentage of the work students report change. These items are: development of career plans and skills (W 87.6%; N-W 75.7%; $P<.05$); political views (W 86.5%; N-W 74.7%; $P<.05$); personal development...understanding one's abilities and limitations, interests and standards of behavior

TABLE 2.2

PERCENTAGES OF STUDENTS REPORTING CHANGE SINCE ENTERING COLLEGE FOR SPECIFIC ITEMS, WORK AND NON-WORK GROUPS IN DIFFERENT PERCENTAGE RANGES

Percentage of Students Reporting At Least Moderate Change		Item
Work	Non-Work	
91-100%	81-90%	- Development of a world view and personal philosophy - Awareness of different philosophies, cultures and ways of life - Personal characteristics
81-90%	71-80%*	- Development of career plans and skills
	*	- Political views
	*	- Personal development...understanding one's abilities and limitations, interests and standards of behavior
71-80%	61-70%	- Reasoning ability...recognizing assumptions, making logical inferences and reaching correct conclusions - Tolerance and understanding of other people and their views - Social development...experience and skill in relating to other people - Skepticism...ability to withhold judgment, raise questions and examine contrary views
61-70%	71-80%	- Kinds of friends you have
51-60%	61-70%	- Aesthetic appreciation and enjoyment of art, music, drama
41-50%	51-60%*	- Writing and speaking...clear, correct, effective communication
41-50%	31-41%	- Basis for improved social and economic status
41-50%	21-30%*	- Quantitative thinking...understanding concepts of probability, proportion, margin or error, etc.
31-40%	21-30%	- Vocational training...skills and techniques directly applicable to a job

* A statistically reliable difference between the percentage of work and non-work students reporting at least moderate change exists.

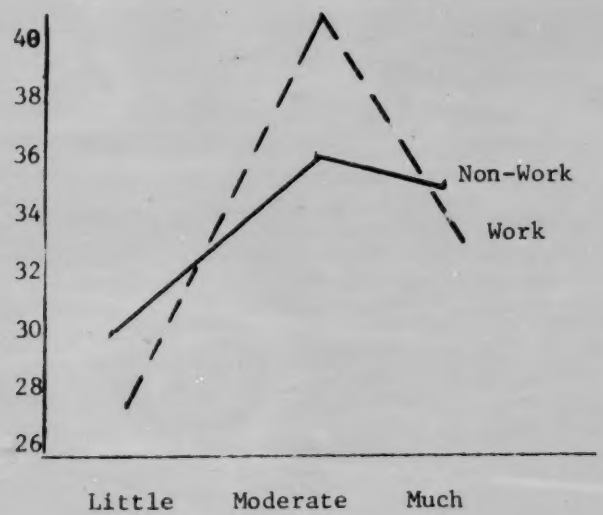
(W 80.7%; N-W 72.0%; P<.10); social development...experience and skill in relating to other people (W 78.5%; N-W 69.1%; P<.10); and quantitative thinking...understanding concepts of probability, proportion, margin or error, etc. (W 43.0%; N-W 26.2%; P<.01).

There was one item for which a greater percentage of non-work students reported change: writing and speaking...clear, correct, effective communication (W 46.8%; N-W 59.8%; P<.01).

These data regarding the percentages of students perceiving changes that have occurred to them since entering college demonstrate essential similarities in the perceptions of students in the work and non-work groups. When the 33 items were ranked for each group from the one with the largest percentage of students reporting at least moderate change to the one with the smallest reported change the correlation between the groups was found to be + .94. This demonstrates a great similarity in the response patterns of the two groups. The same rank order correlation (+.94) was found when the Much Change category was ranked for all items for both groups.

On the other hand, there are differences between the study groups which should be noted. First, for 20 of the 33 items more work students reported at least moderate change. As previously observed, only five of these were statistically significant but the consistency with which more work students reported change is impressive. In only nine instances did more non-work students report change. The percentages were even in four instances. Interestingly, when the Much Change response is examined for each of the 33 items more non-work students are found responding in 20 items. In only eight items do more work students report Much Change. This pattern of more work students responding positively but more non-work stu-

dents responding very positively occurs in several other areas to be reported. It suggests a response pattern for the work students of positivism tempered by caution or reality. In contrast, these data suggest that the non-work students are less cautious or more extreme in their response. This contrasting response pattern is illustrated in the curves given below. They represent average percentage responses for each of the three possible responses for all 33 items.



It is also interesting to note that each of the three items in which more of the non-work students reported change or greater change were academic in nature: writing and speaking; broadened literary interest; and background for further education. In contrast, in only one of the five items in which more work students reported change would be considered academic -- quantitative thinking. The others include development of career plans and skills, political views, personal development and social development.

It was suggested earlier that one of the likely influences upon change was maturation and that such influence might cloud assessment of the possible impact of work upon change. This consideration was, in fact,

the rationale for adjusting the non-work sample. In the case, however, of student perception of changes resulting from college experience one might reasonably expect that upperclass students would consciously perceive greater change than would freshman. Normally were this anticipated trend found it would be interpreted as the result of longer experience, not the result of increased maturity on the part of the students. The hypothesis of change over time was examined independently for the cooperative and non-cooperative samples (not the work and non-work samples). The Chi-Square statistic was used to measure linear regression from freshman through seniors for the two samples of students. These data are summarized in Table 2.3. For 17 of the 33 items the resulting Chi-Square value was statistically significant for both the cooperative and non-cooperative samples. In all instances the trend was in the expected direction, greater change, moving from freshman to senior.

For thirteen of the items the Chi-Square value was statistically significant for the cooperative sample but not significant for the non-cooperative sample. In no instance was there a significant value for the non-cooperative group accompanied by a non-significant value for the cooperative group. It should also be noted that for 12 of 17 items having significant Chi-Square values for both groups the value was greater for the cooperative sample. The point seems to be that while institutional impact is clearly operative insofar as students' reported changes are concerned, it operates in a more pronounced way for the cooperative students than for the non-cooperative students. There is the very clear impression that greater change has occurred among the students who elected the cooperative education option.

The principal kinds of items for which clear trends toward greater

TABLE 2.3

CHI-SQUARE VALUES AND PROBABILITIES FOR CONTINGENCY TABLES OF DIFFERENTIAL RESPONSES TO QUESTIONS OF CHANGE AND CLASS MEMBERSHIP FOR COOPERATIVE AND NON-COOPERATIVE SAMPLES

Item	Cooperative	(8 d.f.)	Non-Cooperative	(6 d.f)
	X^2	P	X^2	P
1. Intellectual interests	35.335	< .001	16.106	.02
2. Broadened literary acquaintance and appreciation	34.643	< .001	14.123	.05
3. Writing and speaking... clear, correct, effective communication	18.203	< .02	13.149	.05
4. Background and specialization for further education in some profession, scientific or scholarly field	35.823	< .001	11.229	.10
5. Vocabulary, terminology, and facts in various fields of knowledge	38.592	< .001	17.048	.01
6. Reasoning ability...recognizing assumptions, making logical inferences, and reaching correct conclusions	31.924	< .001	11.657	.10
7. Ability to see relationships, similarities and differences between ideas	25.449	< .005	18.575	.005
8. Understanding the nature of science, experimentation, and theory	18.303	< .02	12.527	.10
9. Development of an identity and sense of self-confidence	19.963	< .02	13.092	.05
10. Development of a world view and personal philosophy	70.617	< .001	16.002	.02
11. Appreciation of individuality and independence of thought and action	22.301	< .002	13.977	.05
12. Awareness of different philosophies, cultures and ways of life	32.445	< .001	16.548	.02
13. Religious views	14.949	< .10	11.695	.10
14. Moral views	29.400	< .001	16.544	.02
15. Aethetic sensitivity... appreciation and enjoyment of art, music, drama	23.582	< .005	24.055	.001

TABLE 2.3 CONTINUED

Item	Cooperative (X^2)	(8 d.f.) P	Non-Cooperative (X^2)	(6 d.f.) P
16. Development of social skills	20.048	<.02	11.175	.10
17. Social development...experience and skill in relating to other people	16.652	<.05	16.041	.02
18. Development of an interest in new fields of learning	17.555	<.05	3.502	.70
19. Development of general thinking skills	39.875	<.001	5.354	.40
20. Skepticism...ability to withold judgment, raise questions, and examine contrary views	23.641	<.01	7.957	.20
21. Quantitative thinking... understanding concepts of probability, proportion, margin of error, etc.	23.630	<.01	6.540	.30
22. Development of career plans and skills	58.194	<.001	4.845	.50
23. Vocational training... skills and techniques directly applicable to a job	25.260	<.002	3.093	.70
24. Political views	16.483	<.05	2.683	.80
25. Basis for improved social and economic status	21.043	<.01	7.989	.20
26. Development of friendships and loyalties of lasting value	14.499	<.10	7.885	.20
27. Personal characteristics	29.174	<.001	6.370	.30
28. Freedom to express your thoughts and feelings	15.684	<.05	6.716	.30
29. Efficiency as a student	25.464	<.001	4.821	.50
30. Tolerance and understanding of other people and their views	16.838	<.05	5.521	.40
31. Personal development...understanding one's abilities and limitations, interests and standards of behavior	12.362	>.10	8.986	.10
32. Appreciation of religion... moral and ethical standards	7.911	>.40	4.065	.60
33. Kinds of friends you have	4.439	>.80	3.260	.70

change among upperclassmen is found involving both groups include academic and intellectual development, personal development, philosophic development and social development. Those items which show change trends only within the cooperative sample follow much the same pattern with one notable difference - career development.

Agents of Change

Six of the 33 questions asking students the extent to which they felt they had changed since entering college also asked them how important a number of potential change agents had been. The specific change items were:

- development of a world view and personal philosophy
- development of an interest in new fields of learning
- development of general thinking skills
- development of an identity and sense of self-confidence
- development of social skills
- development of career plans and skills

The agents of change were:

- courses
- faculty
- fellow students
- general maturity
- work experience

The perceived overall impact of each of these agents is summarized in Table 2.4, wherein the response percentages for each agent across the six questions are given. These results show that when all of the questions of change are considered together the single most important agent of change perceived by both groups is general maturity. The second most important influence for the work group is work experience. This was the least important influence for the non-work group. It should be noted that work experience differentiated the work and non-work groups at a statistically reliable level ($P<.001$) on each of the six questions.

Examination of the perceived impact of these change agents upon each item of change considered individually reveals several interesting facts.

TABLE 2.4

PERCENTAGES FOR EACH CATEGORY OF IMPACT FOR EACH CHANGE AGENT ACROSS SIX ITEMS OF CHANGE

Change Agent	Non-Work			Work		
	Little/None	Some	Very Much	Little/None	Some	Very Much
Courses	27.6	44.1	28.3	29.2	44.5	26.3
Faculty	35.5	46.3	18.2	39.0	46.5	14.5
Fellow Students	34.1	43.5	22.4	27.8	50.7	21.5
General Maturity	9.7	50.9	39.4	6.7	54.3	39.0
Work Experience	44.2	36.3	19.5	21.2	42.8	35.9

For example, courses were perceived as especially unimportant for student changes with regard to the development of identity and a sense of self-confidence, and the development of social skills. This was true for both study groups. In contrast, fellow students were seen by both groups as particularly influential in the development of identity and development of social skills and, in addition, the development of a world view and personal philosophy. General maturity is also viewed as especially significant for the development of a personal philosophy and a personal identity.

It should be noted additionally that the non-work group, in contrast to the work group, saw the faculty as more influential in effecting change regarding the development of general thinking skills and the development of a personal identity ($X^2=5.037$, $P<.10$). The non-work group also viewed fellow students as a more important force for change in the development of an interest in new fields of learning ($P<.02$). On the other hand, the work sample perceived fellow students and general maturity as more important agents for change in the development of a personal philosophy ($P<.10$, $P<.05$). General maturity was also seen as more important to students in the work group insofar as the development of social skills is

concerned ($P<.02$). It has already been reported that work experience was perceived by the work group as more important for the changes represented in each of the six items.

These change agents, as the perceived changes themselves, were examined across college classes for the entire cooperative and non-cooperative samples. The kind of question asked in this analysis was, for example, "Are courses any more important as a force for change among upperclass students than among underclassmen?" Table 2.5 summarizes the results of the analysis. They show, like those concerning the question of change itself, a substantially greater relationship between class membership and change agents within the cooperative sample than within the non-cooperative sample. For each sample there are 30 measures of relationship: 21 of these are statistically significant for the cooperative sample; only eight are significant for the non-cooperative sample. In all instances, as in the previous analysis, the measured trend is in the direction of the agent having greater influence upon upperclass students.

For the cooperative sample, a statistically reliable relationship between class membership and the change agents of faculty, general maturity, and work experience for each of the six items of change is noted. It is further noted that there is no trend of greater or lesser influence of fellow students upon any of the areas of change for either study sample. This is also the situation for the non-cooperative sample with regard to courses.

It would appear that the earlier-made assertion that in considering student perceived change across classes, maturity is not so much at issue as the impact of college experiences should be amended. The

TABLE 2.5

CHI SQUARE VALUES AND THEIR PROBABILITIES FOR EACH ITEM OF STUDENT CHANGE AND AGENT OF CHANGE ACROSS CLASSES FOR COOPERATIVE AND NON-COOPERATIVE SAMPLES

Item Development of:	Courses		Faculty		Fellow Students		General Maturity		Work Experience	
	X^2	P	X^2	P	X^2	P	X^2	P	X^2	P
1. A world view and personal philosophy										
Cooperative	35.810	<.001	15.191	<.10	3.538	>.80	28.507	<.001	43.207	<.001
Non-Cooperative	6.987	>.30	11.668	<.10	4.237	>.60	11.050	<.10	5.609	>.40
2. An interest in new fields of learning										
Cooperative	12.335	>.10	14.795	<.10	7.348	>.40	21.781	<.01	61.741	<.001
Non-Cooperative	4.098	>.60	8.834	>.10	10.048	>.10	7.787	>.20	2.773	>.80
3. General thinking skills										
Cooperative	28.557	<.001	39.235	<.001	4.332	>.80	28.575	<.001	58.858	<.001
Non-Cooperative	8.944	>.10	6.114	>.40	2.970	>.80	9.150	>.10	3.167	>.70
4. An identity and sense of self-confidence										
Cooperative	7.808	>.40	19.439	<.02	11.264	>.10	20.054	<.01	59.032	<.001
Non-Cooperative	6.169	>.40	19.382	<.01	1.861	>.90	15.409	<.02	20.545	<.005
5. Social skills										
Cooperative	9.533	>.20	15.262	<.10	8.030	>.40	17.392	<.10	66.217	<.001
Non-Cooperative	6.480	>.30	4.778	>.10	10.641	>.10	20.440	<.005	18.492	<.01
6. Career plans and skills										
Cooperative	26.186	>.002	36.968	<.001	5.870	>.60	37.112	<.001	78.999	<.001
Non-Cooperative	8.170	>.20	17.444	<.01	3.249	>.70	6.312	>.30	7.563	>.20

findings relating to the students' view of significant agents of change place considerable importance upon the role of maturity. General maturity was acknowledged by both groups as a significant change agent. It is noteworthy, however, that the increasing importance of maturity as students became older is operative for all items within the cooperative sample but in only three of the items within the non-cooperative sample.

Summary

The data of this chapter on student perceived changes since entering college and agents of that change have suggested several points of interest bearing upon the impact of the cooperative education plan. First, there is evidence that those students who have actually participated in cooperative work experience, in contrast to those students who have not, more frequently perceive that important changes have occurred to them since entering college. It is important to recall that for these examinations the possible effect of maturity was controlled by adjusting the non-work sample. Second, this conclusion was further supported by a study of association between reported change and student class membership. The relationship across classes is far more pronounced for the work group than for the non-work group. Third, the work and non-work groups were found to be differentiated consistently and to a high degree of reliability with regard to the significance of work experience as an agent of change: the work group students perceived work experience as far more influential for changes that had occurred since entering college. The single most important perceived influence for both groups was general maturity. Relatively less important as agents of change for both groups was the influence of faculty and fellow students. Fourth, the trend of increased importance of change agents as students become more mature was again clear for the

cooperative education students and much less clear for the non-cooperative students. Fifth, there is evidence to suggest that students who have engaged in the cooperative work experience, while perceiving change to a greater extent than those students not having worked, are more restrained in the expression of the degree of that change. This is tentatively interpreted as a consequence of greater exposure to the adult world of work and having a more realistic base for assessment of change.

CHAPTER THREE

Student Attitudes and Values

A central focus of this research was to discover the attitudes that liberal arts students hold regarding a variety of topics and to find out if students who participate in the University's cooperative education program differ in any systematic way in their views from those students not involved in the cooperative plan. The attitudinal areas selected for study were:

attitudes about jobs and careers
attitudes toward people, generally
attitudes toward women
attitudes toward minorities
ethnocentric attitudes
societal values
personal values

For some of the areas of interest the questions asked combined to constitute scales. Hence, in these instances it is possible to examine responses to specific items and the summation of responses for a topic. Presentation of results will, for the most part, follow the format of the preceding chapter. Comparisons will be made between the work and non-work samples and across classes for the cooperative sample and for the non-cooperative sample.

Attitudes About Jobs and Careers

Two sets of questions concerning attitudes about jobs and careers were asked. The first set of ten questions asked students to assess the importance of particular job characteristics as requirements for an ideal job or

career. They rated the importance of each as high, moderate, or low. Responses to these items are summarized in Table 3.1. The first point of interest in these findings is that there are no statistically reliable differences between the work and non-work groups regarding their views on the importance of a number of job or career characteristics.

In the eyes of both student groups, the characteristics of greatest importance in assessing a job or career are opportunity to use their special abilities, opportunity to help others, opportunity to be creative, and opportunity to work with people rather than things. Of least importance to them

TABLE 3.1

PERCENTAGE RESPONSES TO IMPORTANCE OF JOB CHARACTERISTICS TO WORK AND NON-WORK SAMPLES

Job Characteristics	Non-Work			Work		
	High	Moderate	Low	High	Moderate	Low
Provide an opportunity to use your special abilities or aptitudes	86.9	13.1	0.0	79.0	19.3	1.7
Provide you with a chance to earn a good deal of money	25.3	58.9	15.9	27.4	60.2	12.3
Permit you to be creative and original	77.6	20.5	1.9	70.4	27.9	1.6
Give you social status and prestige	11.2	49.5	39.3	8.6	54.3	37.1
Give you an opportunity to work with people rather than things	73.8	20.6	5.6	67.7	26.9	5.4
Enable you to look forward to a stable, secure future	43.0	43.9	13.1	45.2	48.4	6.5
Leave you relatively free of supervision by others	51.4	42.1	6.5	52.8	44.1	3.2
Give you a chance to exercise leadership	42.1	49.5	8.5	44.1	50.5	5.4
Provide you with adventure	43.0	44.9	12.1	41.9	47.8	10.2
Give you an opportunity to be helpful to others	79.4	17.8	2.8	71.0	25.3	3.8

Note: None of the Chi Square values comparing the distribution of responses for the two samples is statistically reliable.

is that the job or career should give them social status and prestige and that it should provide them with a chance to make a good deal of money.

It is interesting to note that, although not statistically significant, for the four characteristics which are especially important to both groups the largest percentage differences between the work and non-work groups are found. In each instance, seven or eight percent fewer work students assert the characteristic is highly important. Also in each instance, six to eight percent more work students indicate that the characteristic is moderately important. This is the same response pattern observed in the preceding chapter.

Table 3.2 reports the Chi Square values and their corresponding probabilities for the comparisons made across classes for both cooperative and non-cooperative groups.

TABLE 3.2

CHI SQUARE VALUES AND THEIR PROBABILITIES OF IDEAL JOB AND CAREER CHARACTERISTICS TESTED ACROSS CLASSES FOR THE COOPERATIVE AND NON-COOPERATIVE SAMPLES

Job and Career Characteristics	Cooperative		Non-Cooperative	
	X^2	P	X^2	P
Use special abilities and aptitudes	4.109	$>.80$	2.391	$>.40$
Chance to earn great deal of money	23.776	$<.003$	9.763	$>.10$
Be creative and original	7.217	$>.50$	2.292	$>.50$
Give social status and prestige	12.776	$>.10$	3.160	$>.70$
Work with people rather than things	19.238	$<.02$	3.601	$>.70$
A stable and secure future	7.758	$>.40$	2.486	$>.80$
Free of supervision by others	6.614	$>.50$	2.352	$>.80$
Chance to exercise leadership	6.384	$>.10$*	5.280	$>.50$
Provide adventure	9.141	$>.30$	4.753	$>.50$
Be helpful to others	16.349	$<.01$*	3.753	$>.70$

*These items computed as a 2x5 contingency data, combining the moderate and low responses because of the small expected frequencies in some of the low cells. The resulting degrees of freedom were 4.

In considerable contrast to the change items discussed in the preceding

chapter, very few characteristics required for the ideal job or career reveal student attitude shifts across classes. Within the cooperative sample, three items show statistically reliable association. None within the non-cooperative samples show association of job characteristics and class membership. The nature of the trend within the cooperative group is noteworthy. It is the same for each of the three items: the characteristic becomes less important for upperclassmen. Hence, opportunity to earn a good deal of money, to work with people, and to help people is highly important to freshmen but shifts to being but moderately important to seniors.

Two other questions were asked of students regarding their careers: in what occupation or activity they expected to be engaged ten years, and then twenty years, after graduation. A number of significant results emerged from the analysis of student responses to these two questions. These were open-ended questions with response categories being constructed after all the student responses for both questions had been collected. Percentage responses to the categories of both questions are given in Table 3.3.

TABLE 3.3

PERCENTAGE RESPONSES OF COOPERATIVE AND NON-COOPERATIVE STUDENTS TO QUESTIONS OF WHAT OCCUPATION THEY EXPECT TO BE ENGAGED IN TEN AND TWENTY YEARS AFTER GRADUATION

Occupational Expectation	Ten Years After Graduation		Twenty Years After Graduation	
	Cooperative	Non-Cooperative	Cooperative	Non-Cooperative
Undecided	19.5	11.7	25.3	17.9
Teaching and education	11.6	15.9	9.9	14.7
Law	12.6	12.8	11.6	10.4
Social work, counseling, personnel service	16.0	22.7	14.3	17.8
Behavioral science	4.1	5.5	4.4	2.5
Business	6.8	6.1	6.5	4.3
Government service	9.2	4.3	9.2	6.1
Communications	6.1	3.7	5.5	4.3
Marriage	3.1	4.9	5.8	9.2
Other	10.9	12.3	7.5	12.8

A number of differences are apparent in the four distributions presented in Table 3.3 For one, the percentage of cooperative students expressing uncertainty about their likely occupations both ten and twenty years after graduation is greater than for non-cooperative students. And, as would be expected, the percentage of both groups indicating uncertainty is greater for twenty years after graduation than it is for ten years. Other differences to be noted regard the percentages of the groups, ten and twenty years after graduation, expecting to have occupations in social services and counseling professions, and also in business professions.

To examine these differences more closely the number of categories were telescoped from ten to four: undecided; people-directed occupations; other-than-people-directed occupations; and marriage and other. In addition, since these two items were not included in the reconstitution of the study samples into work and non-work groups, these two study groups were approximated by comparing the junior and senior responses of the non-cooperative group with the responses of middlers, juniors, and seniors of the cooperative group. Table 3.4 gives the results of this analysis for student occupational expectations both ten and twenty years after graduation. The results show that the response distributions for cooperative and non-cooperative students are reliably different for both ten and twenty years. The significant differences occur with regard to whether the anticipated occupations are people-directed or other-than-people-directed. The modified cooperative sample is much more attracted to the other-than-people-directed occupations and, conversely, the non-cooperative sample to a far greater extent expects to be engaged in people-directed occupations. It should be noted that although shifts occur in the response patterns of both the cooperative and non-cooperative samples when comparing ten and twenty year expectations, the Chi

Square values (Cooperative, 1.559; Non-cooperative, 3.880) are not statistically reliable.

TABLE 3.4

OCCUPATIONAL EXPECTATIONS OF COOPERATIVE AND NON-COOPERATIVE UPPERCLASSMEN FOR TEN AND TWENTY YEARS AFTER GRADUATION

Occupational Expectations	Ten Years		Twenty Years	
	Coop	Non-Coop	Coop	Non-Coop
Undecided	17.5	13.8	24.0	21.3
People-directed	40.9	58.5	38.0	45.7
Other-directed	28.9	16.0	26.9	16.0
Marriage and other	12.9	11.7	11.1	17.0
X^2 (3df.)	8.603		28.355	
P	$< .05$		$< .001$	

It is also noteworthy that substantially greater indecision on the part of the total cooperative sample (Table 3.3) is nowhere near so substantial for the upperclass cooperative sample (Table 3.4). This suggests that much of the indecision is to be found among the underclassmen of the cooperative sample. The data for cooperative and non-cooperative freshmen given in Table 3.5 show this to be so. The same pattern of difference between the cooperative and non-cooperative freshman students regarding their preference for people- or other-than-people-directed occupations as the upperclass groups is noted. It is also noted that a large portion of the non-cooperative sample "other occupation" preferences are found among the freshman students.

The final analysis of these occupational expectation data was to find out if any reliable trends from freshmen to seniors exist. For both ten year and twenty year expectations the results show statistically reliable trends for the cooperative sample but not the non-cooperative sample. The observed trends within the cooperative sample are for less occupational uncertainty

TABLE 3.5

OCCUPATIONAL EXPECTATION OF COOPERATIVE AND NON-COOPERATIVE FRESHMEN FOR TEN AND TWENTY YEARS AFTER GRADUATION

Occupational Expectations	Ten Years		Twenty Years	
	Coop	Non-Coop	Coop	Non-Coop
Undecided	25.4	2.9	28.2	2.9
People-directed	40.8	55.9	38.0	47.1
Other-directed	19.7	11.8	19.7	14.7
Marriage and other	14.1	29.4	14.1	35.3
X^2 (3df)	11.202		13.029	
P	<.02		<.01	

and increased expectation to be engaged in other-than-people-directed occupations.

The obtained data relating to student career attitudes and expectations reveal that both study groups have similar views as to the criteria for an ideal job and career. They want to use their abilities, be able to be original, to be helpful, and to work with people. Evidence indicated, however, that being helpful to people and working with people became less important to the cooperative sample as they moved from freshman to senior. This was reinforced by the other career question regarding after graduation occupational expectations. A trend away from people-directed occupations was observed.

These findings also indicate substantially greater uncertainty about their occupational futures on the part of the cooperative students. One interpretation of this is that cooperative students, having worked and consequently realizing the myriad of circumstances which can affect and alter one's plans, are more realistic when they assert they do no know what they will do ten and twenty years after they graduate from college. Indeed, this may well be the case for some. But the fact that the trend is toward less uncertainty as we

compare student responses from class to class suggests that students may elect to pursue the cooperative education program because they are uncertain of their career goals and through participation make career choices. More often than for their non-cooperative peers, they choose occupations which are not people- and service-directed.

Social Attitudes

The study results thus far presented suggest that students who elect and participate in the cooperative education program tend to come from somewhat lower socio-economic backgrounds, are less certain of their career expectations, perceive themselves to have changed considerably since entering college as a result, primarily, of general maturity and work experience, are less prone to extreme expressions of attitude, and are less attracted to careers that involve direct service to people. A view of the cooperative education student as being upwardly mobile but not entirely sure of himself, or exactly where he wishes to go, as being greatly influenced by his cooperative work experience and as being or becoming cautious or conservative, begins to emerge.

To examine more directly the hypothesis of greater conservatism on the part of the cooperative education students, several series of questions regarding their attitudes about various social issues were asked.

Societal Values

A set of seven questions was asked which was intended to measure student alienation from society, as reflected in three major belief dimensions: the repressiveness and corruptness of society; the overreliance of society upon science and technology; and the underestimation of the important of the qualities of mystery and feeling in contrast to reason and abstract thinking. The responses to these items for both the work and the non-work samples are

summarized in Table 3.6.

Student acceptance of the propositions contained in these items is selective. The majority of both groups express concern about the corrupt and repressive qualities of big government and big business. Similarly, they tend strongly to agree that most people are too materialistic and do not heed sufficiently the direct apprehension of experience. On the other hand, most students minimize the significance of crime in relation to ethical standards of business or distrust the values of science, technology, and rational thought.

In only two items do the response distributions of the work and non-work students differ sufficiently to approach statistical significance. The Chi Square value obtained from comparing the two groups with regard to item three, concerning the relative seriousness of crime in the streets and unethical practices, is 5.358 ($P < .10$). The Chi Square value for item seven, concerning the direct value of experience, is 5.536 ($P < .10$). The Chi Square value of item four, regarding the problem of science and technology, nearly approaches significance ($X^2=4.595$). It is interesting to observe that for each of the seven items a smaller percentage of the work sample agrees strongly with the proposition expressed. In all but two of the items, a larger percentage of the work sample expresses disagreement or strong disagreement with the proposition. Because of the consistency of response differential, the frequencies for the seven items were added and put into a single contingency table, as below. The resulting Chi Square value of 25.685 with 14df. is significant beyond the five percent level of confidence. The principal point of difference, as observed before, is the extreme position (strongly agree) of the non-work group, in contrast to the more moderate position (agree) of the work group. The work group is clearly less extreme in its views regarding these societal issues and the hypothesis of a generalized caution on extreme liberal response is further supported.

TABLE 3.6

SOCIETAL VIEWS OF WORK AND NON-WORK SAMPLES

Item	Non-Work			Work		
	Strongly Agree	Agree	Disagree/ Strongly Disagree	Strongly Agree	Agree	Disagree/ Strongly Disagree
1. The most serious and widespread acts of violence against society and humanity are being committed by government and industry: war, pollution, destruction of natural resources, urban blight, etc.	36.4	53.3	10.3	27.4	55.4	17.2
2. A society that is more concerned about law and order than about liberty and justice is basically repressive	24.3	56.1	19.6	17.7	55.4	26.9
3. Crime in the streets is a relatively small problem compared with crime or unethical practices in business, such as false advertising, shoddy products, bribery, inside "deals," etc.	17.8	37.4	44.9	7.0	39.2	53.8
4. Science and the technology resulting from it have created problems and dangers that cannot be solved by more science and technology	15.0	34.5	50.5	7.0	31.2	61.8
5. Achieving, doing, accumulating possessions, making money, gaining status and influence, etc., are values of questionable desirability	25.2	50.8	24.3	17.7	60.7	22.6

TABLE 3.6, continued

Item	Non-Work			Work		
	Strongly Agree	Agree	Disagree/ Strongly Disagree	Strongly Agree	Agree	Disagree/ Strongly Disagree
6. Reason, logic, abstract thought, and similar rational modes of analysis are sometimes inappropriate ways of gaining insight and understanding	10.3	48.6	41.1	4.8	45.7	49.5
7. A sense of mystery and the direct quality of experience and feeling are values that should be more highly cherished in our society	19.6	54.2	26.2	9.7	66.1	24.2

	Strongly Agree	Agree	Disagree and Strongly Disagree	Total
Non-Work	159 (21.2%)	358 (47.8%)	232 (31.0%)	749
Work	168 (12.9%)	658 (50.5%)	476 (36.6%)	1302
Total	327	1016	708	2051

When these items of societal attitudes were compared across classes for both cooperative and non-cooperative samples, no clear associations were found. Although not statistically reliable, there was some tendency for upperclass cooperative students, in contrast to their underclass colleagues, to express less frequently the strongly agree position.

Minority Problems

Six questions were asked of the student samples which provided them with opportunity to show recognition of injustice to Blacks, acceptance of collective responsibility for improvement of interracial relationships, and readiness to undertake special programs to speed the process of integration and opportunity. Responses of the work and non-work groups to these items are given in Table 3.7. In large measure, students interviewed in this research project believe that minority members have been and continue to be discriminated against, that society will benefit from school integration, and that more money must be spent on education and welfare of the culturally disadvantaged. On the other hand, they largely reject the notion of suspending standards, even temporarily, to aid minority entrance into professional fields.

Of the six items, only one (minorities receive unequal treatment under the law) differentiates the work and non-work groups ($X^2=7.091$, $P< .05$). Once again, substantially fewer members of the work group express strong agreement, while more express agreement. This is the pattern in three additional items, but the differences are not statistically reliable.

Comparisons across classes for the cooperative sample showed significant trends toward increased acceptance of the reality of discrimination of minor-

TABLE 3.7

STUDENT ATTITUDES TOWARD MINORITIES

Item	Groups	Strongly Agree	Agree	Disagree and Strongly Disagree
1. If Blacks live poorly, it is in great part the fault of discrimination and neglect from Whites	Non-Work	22.4	57.9	19.6
	Work	19.9	62.4	17.7
2. Anyone, no matter what his color, who is willing to work hard can get ahead in life	Non-Work	2.8	29.0	68.2
	Work	5.3	32.8	61.8
3. More money and effort should be spent on education, welfare and self-help programs for the culturally disadvantaged	Non-Work	36.4	55.1	8.4
	Work	27.4	65.1	7.5
4. In the long run, school integration will contribute to the health of our society and to the quality of our education	Non-Work	23.4	55.1	21.5
	Work	19.9	64.0	16.1
5. Qualifications and standards should be modified temporarily in order to get large numbers of people from minority groups into the professions...doctors, lawyers, engineers, banks, etc.	Non-Work	3.7	31.8	64.5
	Work	2.7	30.1	67.2
6. Members of minority groups, compared with the majority of citizens, have not usually received and do not now receive equal treatment from the police and the courts	Non-Work	30.8	54.2	15.0
	Work	19.3	71.1	11.3

ities for upperclass students. The first, second, and sixth items (see items of Table 3.7) all show statistically reliable trends across classes. Within the non-cooperative sample, only the second item shows a reliable trend. It is, however, in the same direction of acceptance of fact and impact of discrimination.

Woman's Role

Student attitudes toward the several roles of women were explored by a set of six questions. The results are given for the work and non-work samples in Table 3.8. In only one instance, concerning the proposition that certain practices perpetuate the notion of women as submissive, is there a statistically reliable difference between the responses of the work and non-work groups. Once again, the discrepancies occur in the proportions of students agreeing and strongly agreeing. For each item, more non-work students strongly agree than do work students.

The basic thrust of response, however, is the same for both student groups. They clearly believe women should have the same career opportunities and benefits as men, that women should be involved in policy-making, and that they should be free to decide to use birth control methods, even abortion. There is more diversity of attitude regarding appropriateness and effect of women entering into careers if they have young children and whether or not the concept of female submissiveness is perpetuated by such practices as glamor advertising, beauty contests, etc.

When these items were tested across classes for both the cooperative and non-cooperative samples, two items showed linear regression within the cooperative group. Within the non-cooperative group, one item was found to be associated with class membership. Within the cooperative sample an increasing number of students, moving from freshman to senior, expressed an accepting

TABLE 3.8

STUDENT VIEWS REGARDING THE ROLES OF WOMEN

Item	Groups	Strongly Agree	Agree	Disagree/ Strongly Disagree
1. Professional women should have the same benefits and opportunities as their male colleagues	Non-Work	68.2	30.8	0.9
	Work	63.4	35.5	1.1
2. Family patterns and attitudes should allow and often encourage married women to follow their own interests even if they have young children	Non-Work	37.4	47.7	15.0
	Work	30.6	44.6	24.8
3. More women should be involved in policy formation, both in business and government	Non-Work	41.1	53.3	5.6
	Work	29.0	60.7	10.2
4. Birth control methods, including abortion, should be available to any woman who wants them	Non-Work	58.9	34.6	6.5
	Work	48.9	40.3	10.8
5. Glamorous advertising, beauty contests, and similar portrayals of women perpetuate the concept of women as submissive and security-seeking, rather than as independent, self-reliant human beings	Non-Work	29.0	35.5	35.5
	Work	17.7	50.5	31.7
6. In families where the mother spends little time at home, there is generally a bad effect on the children	Non-Work	12.1	46.8	41.1
	Work	10.2	49.4	40.5

attitude toward the position that any woman who wants it should have birth control methods available to her, including abortion (X^2=16.101; $P < .05$). Also within the cooperative sample, older students reject more than younger students the assertion that there is a bad effect on young children when the mother spends little time at home (X^2=20.145; $P < .01$). Within the non-cooperative sample of students, a greater percentage of more mature students believe that family patterns and attitudes should encourage married women to

follow their interests even if they have children (X^2=11.124; P< .10). Hence, there is some evidence that as students mature they tend to accept the rights of women to pursue their own life styles with equality with their male colleagues. It is not possible to draw inferences about the differential impact of being or not being a cooperative student from these data.

Attitudes Toward People

Two sets of questions were asked students which would furnish information regarding their view of people. The first set provided information on the *authoritarian* bias of students. The results of this *Four Item F Scale* are given in Table 3.9. None of the items show a statistically significant difference between the two groups.

TABLE 3.9

ETHNOCENTRIC ATTITUDES OF BOTH STUDY GROUPS

Item	Groups	Agree Quite A Bit	Agree a Little	Disagree
1. What young people need most of all is strict discipline from parents	Non-Work	2.8	43.0	54.2
	Work	8.1	43.0	48.9
2. Most people who don't get ahead just don't have enough will power	Non-Work	5.6	29.9	64.5
	Work	7.0	33.3	59.7
3. A few strong leaders could make this country better than all law and talk	Non-Work	10.3	40.2	49.5
	Work	13.4	30.6	55.9
4. People sometimes say that an insult to honor should not be forgotten. Do you agree or disagree with that?	Non-Work	4.7	26.2	69.2
	Work	5.9	26.9	67.2

The second set of items focused upon the students' trust of other persons. The results from these three items are given in Table 3.10. They indicate that the majority of students believe others can be trusted and will be fair in their dealings with people. On the other hand, half the students

TABLE 3.10

STUDENT ATTITUDES TOWARD PEOPLE

Item	Groups	Responses	
1. Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?		Most can be trusted	Can't be too careful
	Non-Work	67.3	32.7
	Work	68.9	31.1
2. Would you say that most of the time people try to be helpful or that they are mostly just looking out for themselves?		Try to be helpful	Look out for themselves
	Non-Work	49.5	50.5
	Work	50.0	50.0
3. Do you think that most people would try to take advantage of you if they got the chance or would they try to be fair?		Take advantage	Try to be fair
	Non-Work	27.1	72.9
	Work	25.9	74.1

believe people mostly look after themselves. The distribution of these attitudes toward people is the same for both the work and the non-work samples.

When responses to the items were examined across classes for the full cooperative and non-cooperative samples, no significant associations were found. For the first set of items, reflecting authoritarian attitudes, two showed association across classes. Both occurred within the cooperative sample, and both were in the direction of increased non-authoritarian attitudes as the students matured.

Personal Values

Students were asked two concluding series of questions regarding their personal priorities. Each student was given two lists of items and asked to

order each list according to the importance of the item to him personally. There were fourteen items to rank in the first list and eleven in the second. The items are found in Tables 3.11 and 3.12. The obtained data were put into frequency distribution for each item and categorized into three response groups - high, middle, and low priority. The results of this analysis for the full cooperative and non-cooperative samples are found in Tables 3.11 and 3.12. The single most important concern for both groups is obtaining love and

TABLE 3.11

PERSONAL VALUES OF COOPERATIVE AND NON-COOPERATIVE SAMPLES: SET ONE

Item	High Priority (Ranks 1-4)		Middle Priority (Ranks 5-9)		Low Priority (Ranks 10-14)	
	Coop	Non-Coop	Coop	Non-Coop	Coop	Non-Coop
Career (X^2=9.845, P < .01)	67.6%	52.8%	24.9%	35.6%	7.5%	11.6%
Love and affection	80.1	81.0	17.1	15.3	2.7	3.7
Activities with future family	44.9	41.1	36.3	36.2	18.8	22.2
Identity (X^2=5.605, P < .10)	63.7	74.2	27.7	20.9	8.6	4.9
Intellectual (X^2=7.909, P < .02)	23.1	23.9	49.7	60.1	27.2	16.0
Thinking and reflection (X^2=7.762, P < .05)	28.1	40.5	56.2	48.5	15.7	11.4
Helping other people	33.6	32.5	51.0	51.5	15.4	16.0
Sexual needs	24.0	30.1	60.6	54.0	15.4	15.9
National participation	8.2	4.9	32.2	29.4	59.6	65.5
Religious beliefs	7.5	6.7	17.1	17.8	75.4	75.5
Social life	6.8	4.3	49.7	52.1	43.5	43.6
Participation in community affairs	4.4	4.9	39.1	38.0	56.5	57.1
Sports	2.0	1.2	17.5	15.3	80.5	83.4
Home improvements	5.1	3.1	22.0	24.4	72.9	72.5

affection. The next two items of high priority are career and identity. These items are differentially important to the two groups. Establishing a career is of higher priority in the cooperative students' list of concerns, and finding one's identity is more important to the non-cooperative students. Two other items also show priority differences between cooperative and non-cooperative

students. Of particularly low concern to both groups are sports, religious beliefs, home improvements, and participation in national affairs.

A second set of concerns, having some overlapping items with the first set, was presented students to arrange in order of importance. The results were treated in the same manner as those of the first set. They are summarized in Table 3.12. Although the absolute percentages differ, the item of greatest importance to both groups in the second set of concerns is, as it was in the first set, achieving love and affection. The next two items showing high priority in the ranking of concerns is acceptance and emotional well-being. The latter is especially important to the cooperative group and the former to the non-cooperative group. Low priority concerns for both groups include play and recreation, sensory and aesthetic pleasure, and curiosity and knowledge.

TABLE 3.12

PERSONAL VALUES OF COOPERATIVE AND NON-COOPERATIVE SAMPLES: SET TWO

Item	High Priority (Ranks 1-3)		Middle Priority (Ranks 4-7)		Low Priority (Ranks 8-11)	
	Coop	Non-Coop	Coop	Non-Coop	Coop	Non-Coop
Love and affection	62.7	59.3	26.7	30.2	10.6	10.5
Emotional well-being (X^2=5.464, P< .10)	44.7	39.5	35.4	30.9	19.9	29.6
Maintaining self-respect	33.3	30.4	45.7	51.6	21.0	18.0
Being accepted (X^2=4.522, P< .05)*	42.3	51.8	44.3	34.6	13.4	13.6
Achievement	32.6	26.1	49.8	57.8	17.5	16.1
Curiosity and knowledge	8.9	9.3	30.3	29.6	60.8	61.1
Sexual needs	22.3	18.0	53.6	64.0	24.1	18.0
Wealth	33.4	34.8	31.7	32.3	34.8	32.9
Play and recreation	2.1	3.1	31.6	26.5	66.3	70.4
Fame and recognition (X^2=6.176, P .05)	14.1	23.1	26.8	21.9	59.1	55.0
Sensory and aesthetic pleasure	3.1	3.1	23.4	18.9	73.4	78.0

*Partitioned as a 2x2 contingency matrix with 1 d.f., using high and middle priorities.

Student Activities

If, as it is generally asserted, attitudes guide and direct the overt behavior of people, then one might reasonably infer attitudes from examination of the activities of those people. Hence, as a final approach to understanding the attitudes and values of the students interviewed for this project, questions were asked regarding the activities in which they had participated. Students were asked to respond to two series of questions. The responses to the first set are summarized in Table 3.13.

TABLE 3.13

STUDENT ACTIVITIES: SET ONE

Activity	NON-WORK			WORK			
	P	Often	Occasionally	Never Or Almost Never	Often	Occasionally	Never Or Almost Never
1. Reading non-fiction	<.02	56.1	41.1	2.8	43.5	45.7	10.8
2. Reading fiction	<.01	54.2	39.3	6.5	35.5	56.5	8.1
3. Reading escape literature	<.02	25.2	33.6	41.1	11.3	40.3	48.4
4. Social activities	>.90	37.4	55.1	7.5	39.2	53.2	7.5
5. Movies	>.10	28.0	57.9	14.0	34.4	58.1	7.5
6. Lectures	<.10	15.0	54.2	30.8	11.3	45.2	27.6
7. Museums, symphonies, etc.	<.02	31.8	57.9	10.3	21.0	54.8	24.2
8. Civil rights activities in school	>.10	5.6	31.8	62.6	2.2	26.3	71.5
9. Civil rights activities in other states	>.10	2.8	11.2	86.0	1.6	5.4	93.0
10. Political activities	>.40	9.3	43.0	47.7	8.6	36.6	54.8
11. Campus politics	>.30	2.8	25.2	72.0	6.5	23.1	70.4
12. Breaking rules for fun	<.10	3.7	22.4	73.8	0.5	19.4	80.1
13. Seeking off-beat places	>.70	10.3	49.5	40.2	12.4	45.2	42.5
14. Service activities off campus	>.10	10.3	35.5	54.2	6.5	28.5	65.1
15. Sports spectator	<.05	18.7	49.5	31.8	29.0	51.6	19.4
16. Sports participant	>.10	19.6	37.4	43.0	27.4	38.7	33.9

Seven of the activities included in this set of voluntary activities differentiate the work and non-work students. Five of these seven activities could be described as intellectual and cultural pursuits...reading, attending lectures, visiting museums and attending concerts. In each instance significantly more non-work students engaged in the activity than work students. More non-work students also asserted they break rules simply for the fun of it. The only activity in which significantly more work students participate is attending spectator sports.

The second set of activity questions was a much longer list (44) but the number of items showing differences between the work and non-work students were no greater. Responses to these activity items are found in Table 3.14. Again, more non-work students report cultural and intellectual activities such as reading contemporary novels (item 3), reading poetry (5), attending lectures by some literary person (5), attending a foreign concert or exhibition (22) and entertaining a foreign visitor (24). On the other hand, the work students evidenced greater interest in political affairs such as discussing international affairs with friends (18) and closely following state and national politics (38).

These activities were tested for association with class level for both the cooperative and non-cooperative samples. Few trends from freshman to senior were evident. In all, 18 percent of the items showed statistically reliable associations. The major themes shown by those items with association were greater involvement with national and international affairs and greater disengagement with church and formal religion on the part of both groups of upperclass students.

Of some importance within the context of other findings is the trend away from "breaking rules for fun" which was found for the cooperative sample (X^2, 19.997; $P<.02$). The statistic on this item for the non-coop-

TABLE 3.14

STUDENT ACTIVITIES: SET TWO

Activity	P	Non-Work		Work	
		Yes	No	Yes	No
1. Talked about new books with friends	>.10	87.9	12.1	80.6	19.4
2. Bought books for personal library	>.30	89.7	10.3	85.5	14.5
3. Read one or more contemporary novels	<.10	90.7	9.3	81.7	18.3
4. Read book reviews	>.20	64.5	35.5	57.0	43.0
5. Read poetry (not course assigned)	<.01	64.5	35.5	45.2	54.8
6. Read for fun at least one book per month	>.90	57.0	43.0	55.9	44.1
7. Attended lecture by novelist, critic, poet, etc.	<.10	40.2	59.8	24.7	75.3
8. Wrote essay, story, etc. for publication	>.80	9.3	90.7	10.8	89.2
9. Attended church service one or more times	>.30	56.1	43.9	61.8	38.2
10. Discussed religion with friends	>.90	86.9	13.1	86.6	13.4
11. Belonged to a church	>.20	44.9	55.1	52.7	47.3
12. Read religious articles	>.70	72.9	27.1	70.4	29.6
13. Observed religious rituals	>.60	37.4	62.8	34.4	65.6
14. Contributed regular sum to a church	>.20	11.2	88.8	16.7	83.3
15. Attended one or more church functions held during the week	>.40	11.2	88.8	15.1	84.9
16. Read one or more religious books	>.10	33.6	66.4	24.2	75.8
17. Did volunteer work for my church	>.30	8.4	91.6	12.9	87.1
18. Discussed international relations with friends	<.05	89.7	10.3	96.8	3.2
19. Discussed foreign people and cultural events with friends	>.30	92.5	7.5	88.2	11.8
20. Saw one or more foreign films	>.60	71.0	29.0	67.7	32.3
21. Read one or more books by foreign authors	>.10	73.8	26.2	64.0	36.0
22. Went to foreign concert, exhibition, etc.	<.01	69.2	30.8	49.5	50.0
23. Participated in efforts to improve understanding between countries, races, ethnic groups	>.10	38.3	61.7	28.5	71.5
24. Entertained a visitor from another country	<.01	43.9	56.1	27.5	72.6
25. Contributed time or money to an international group	>.80	27.1	72.9	25.3	74.7
26. Listened attentively to radio music	>.30	87.9	12.1	83.3	16.7
27. Discussed music with friends	>.80	95.3	4.7	94.1	5.9
28. Bought records	--	86.0	14.0	86.0	14.0
29. Attended one or more concerts of contemporary music	>.80	83.2	16.8	84.9	15.1
30. Listened to serious music by contemporary composers	>.10	89.7	10.3	82.2	17.2
31. Read reviews of new record releases	>.20	86.0	14.0	90.9	9.1
32. Attended one or more symphony, opera, etc.	>.60	56.1	43.9	59.7	40.3
33. Played a musical instrument	>.20	49.5	50.5	41.4	58.6
34. Participated in a musical group, choir, orchestra	>.90	17.8	82.2	18.8	81.2
35. Discussed politics with friends	>.50	95.3	4.7	97.3	2.7
36. Listened to political programs on TV or radio	>.70	93.5	6.5	95.2	3.1
37. Read articles on state and national problems	>.50	94.4	5.6	91.9	8.1
38. Followed state and national politics closely	<.01	62.6	37.4	79.0	21.0
39. Signed petition, wrote letter or card on political issue	>.40	67.3	32.7	72.6	27.4
40. Read one or more books about politics	>.30	57.9	42.1	64.0	36.0
41. Attended meetings of political club or party	>.90	31.8	68.2	30.6	69.4
42. Attended public protest or rally	>.90	39.3	60.7	40.3	59.7
43. Did work for a political party	>.60	31.8	68.2	28.2	71.5
44. Talked with an elected official about a problem	>.30	32.7	67.3	26.3	73.7

erative group is: X^2, 26.29; $P>.80$. These findings together with the result reported in Table 3.13 (item 12) support the hypothesis of greater maturity of judgment and responsibility being associated with cooperative education work experience.

Summary

This chapter has examined several dimensions of attitudes held by the two student samples of this study. For the most part, the attitudes held by students who have had cooperative education work assignments are like those of students who have not enrolled in the University's cooperative education program. With regard to their attitudes about jobs and careers, for example, both groups value most importantly the opportunity to use their talents and specialized abilities, the opportunity to be creative, and the opportunity to work with people and to serve people. Further, both groups view society as having elements of corruption and repressiveness and being too materialistic in character. They agree, too, that minorities have been and continue to be discriminated against and that women should have the same career opportunities as men. The essential view of these students toward other persons is positive and trustful. Also, for the most part, the kinds of activities in which they participate are similar.

On the other hand, a number of significant differences between the work and non-work samples were noted. Work students for example, to a much greater degree than their non-work peers, are thinking of careers in various business areas outside the service fields. The work students, too, are seen as somewhat less idealistic, somewhat more conservative and more realistic in their attitudes toward society, its problems and its solutions to these problems. They do not, for example, agree to the extent that the non-work students do that crime is but a small problem in our society compared to the crime of unethical business practices; nor do they

agree as strongly as do the non-work students with the view that minorities do not receive equal treatment under the law. While accepting the position that women should be free to pursue careers and should be treated equally with their male colleagues, fewer work students believe strongly that no ill-effect upon children occurs when women are out of the house working, that business practices perpetuate the myth of women as submissive and and that women should be involved in business and government policy formation. Finally, in comparison with non-work students, work students are more concerned about their careers than they are about intellectual and reflective pursuits. The activities reported by the two groups also reflect greater interest in intellectual and cultural matters in the past of the non-work student. In numerous ways the cooperative student emerges as a conservative and practical person whose views of people, society, the problems of society and the solutions to problems have been tempered by involvement with the realities of the adult working world.

CHAPTER FOUR

Summary, Discussion and Conclusions

The research reported in the preceding chapters has focused upon student perceptions of how they have changed since entering college and upon their attitudes, values and interests. It has specifically sought to find out what, if any, influence student involvement in cooperative education work experience has upon these variables. The information collected for the research and summarized in the preceding chapters of this report include the following:

- input characteristics of student samples, eg. age, major social class membership
- student perceptions of changes which have taken place in them since entering college, eg. interest in new fields of study, development of a world philosopy, development of religious values, and development of a personal identity
- student perception of the influence of various potential agents of change, eg., courses taken, faculty, work experience
- career attitudes and expectations
- social attitudes, eg., attitudes concerning minorities, attitudes concerning the role of women
- authoritarian attitudes and attitudes about the integrity of people
- personal values, eg., the importance of personal security, of love and affectiom, of achievement, of fame and recognition

Since data were collected from all classes of students pursuing the cooperative education option in the College of Liberal Arts as well as

students from each class of a fulltime option two major kinds of comparisons were possible. First, the data permitted direct comparison of the attitudes of students for whom work was a regular element of their education with a control group of students for whom work was not a part of their educational program. Second, comparisons across classes, freshman through senior, were possible for both cooperative and non-cooperative students.

The research first showed that the cooperative students differed from their non-cooperative peers with respect to a number of variables referred to as *input characteristics*. It was observed, first of all, that as compared to the non-cooperative student group, a disproportionate number of the cooperative group was male. One might speculate that when given a free choice to participate or not in cooperative education more males will do so because work preparation for after college careers is traditionally more a male role in our society. It was also observed, somewhat suprisingly, that class for class the cooperative students average about one year younger than the non-cooperative students. Hence, at graduation with the additional year in the cooperative programs the average age of the two study groups was about the same. A reasonable hypothesis to explain this age differential is that the somewhat older student entering the University might, first of all, be fairly clear about his career objectives and since seeking to do this is a principal reason for the liberal arts students to participate, fewer older students see the need to join the program. The differential may also be explained in terms of the older student not wishing to take an additional year for graduation.

The socio-economic characteristics of the students also differentiated

the cooperative and non-cooperative student groups. While both groups were distributed across the full range of social strata, the central tendency of the cooperative sample was lower. The national study of cooperative education, completed in 1960, obtained similar findings (Wilson and Lyons). It seems clear that the cooperative plan has a special appeal to students of working class families. It seems quite possible that the configuration of input characteristics associated with the cooperative education students - mostly male, younger than the comparison sample of non-cooperative students, more closely associated with its working class of our society - constitutes an important basis for understanding the outcomes associated with participation in cooperative education

In terms of a substantive area, career planning and development is clearly one for which the cooperative experience has a substantial impact. The cooperative students, considerably more than their non-cooperative peers, perceive that this has been a significant area of change since entering college. Further, each class of cooperative students, moving from freshman to senior, views career development as a more significant area of change than the class before it. It is important to note here that many more freshman students planning to register for the cooperative program were uncertain of their career goals and expectations and to recall that these students tended to be about a year younger than freshmen not planning to co-op.

General maturity and work experience were seen as the principal agents of this career development and these together with faculty influence and courses became increasingly important for upperclass cooperative students. Of these three elements, only the faculty assumed increasing importance for the non-cooperative students. With fellow students being the only agent which did not have an increasing impact on students regarding their career development,

the very clear impression emerges that career decision and preparation is vitally important to the cooperative students and they are sensitive to the constructive influence of a variety of potential change agents.

With respect to career characteristics to which students aspire and the career fields they anticipate being in after graduation the cooperative students do not present a single-minded picture. On the one hand, like their non-cooperative counterparts, they entered the University, wanting career which provided opportunities to work with people and to serve people. Unlike the non-cooperative students, however, their aspirations changed over their years in college so that they were less interested in service careers and more often expected to enter fields of business and other non-people directed professions. At the same time that their career aspirations and expectations were changing to business-like fields their career criterion of opportunity to earn a substantial sum of money became less important. The non-cooperative student entered wanting a people-directed career and continued wanting it throughout college.

It is hypothesized that the shift, from class to class, away from service oriented careers, to less uncertainty and to less emphasis upon opportunity to earn "big money" are all the consequent of the cooperative student actually working productively. It is proposed that these student trends are the result of students interacting with the adult world of work, of finding out first-hand about career possibilities and about their associated characteristics. The evidence suggests that the cooperative students, in some contrast with their non-cooping peers, form judgments about careers based upon actual experience.

It was suggested earlier, as the findings of this research were being presented, that the cooperative education students were, as a group, more conservative and perhaps their views of the world and people would reflect

this. To a degree, the subsequent evidence confirmed this. Implicit, however, in that earlier hypothesis was the further suggestion that this emerging conservatism, fostered by direct involvement with adult work and combined with, or possibly a consequence of, upward mobility striving could lead the cooperative student to a harsh, authoritarian, non-humanistic view of the world and of people. The findings did not support this conjecture. On the contrary, the data showed that most students participating in this research, regardless of whether or not they were cooperative education students, have concern for the dignity and worth of people; recognize and accept the fact of discrimination and unequal treatment of minorities and women, reject these practices and have humanistic views regarding solutions to these problems.

The overall attitudes of the cooperative students toward people and society were found to be very similar to those of the non-cooperative students. They do differ, however, in three important ways. First, the cooperative students demonstrate a kind of restraint in the expression of their attitudes. Much more often they would agree with a view, whereas the non-cooperative students would strongly agree with the same view. This kind of response difference was noted throughout the research. It was also noted as a trend within the cooperative sample when comparing across classes; the upperclass students evidencing some greater caution than underclass students. Second, the cooperative students tended toward greater selectivity in their social views. This was particularly the case in accepting critical views of the free enterprise system, traditional views of motherhood, and that minority members are treated unfairly by the courts. Third, the evidence indicated a shift in the direction of less authoritarian views for cooperative students when comparisons were made across classes.

The cooperative students of this research did not place the same value as non-cooperative students on intellectual and cultural pursuits. Clearly their most pressing concerns focused upon career attainment. To a substantially greater degree the non-cooperative students assigned more importance to matters of reflection, finding personal identity and pursuing intellectual activities. Their participation in voluntary activities reflected these interests.

It appears that in a number of important ways cooperative education work experience has had an impact upon these participating students. Because this research was limited to a cross section design, caution must be used in drawing conclusions. Nonetheless, the findings of the research clearly suggest that greater educational change is associated with participation in cooperative education. These changes were particularly evident in matters relating to career development but extended, as well, to attitudes toward people and society as a whole. There is also the suggestion of increased caution or prudence in making judgments - judgment tempered by actual experience. The cooperative student in this research demonstrated anxiety about careers and preoccupation with career development. This may simply be the natural consequence of the fact that cooperative education has particular appeal to those who are really unsure of their career goals. It may also be that the cooperative education program itself fostered concentration on this issue of career development. One might hypothesize that a program which emphasizes attainment of social goals would achieve more dramatic changes in social attitudes. The specific hypothesis is that outcomes are associated with intent.

One of the suggested concomitants of the strong concern for career development is relatively lessened interest in other areas - intellectual pursuits for their own sake, and cultural involvement. The evidence

of this research is that these values were much less important to the cooperative students. Additional research, studying the relative importance of these different values in a setting stressing objectives other than career development, should be undertaken. This would provide a basis for determining if the work experience itself engenders the strong career drive observed here, or if, as seems more likely, the work experience becomes a vehicle or strategy for better achieving the goals sought by the institution.

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APPENDIX A

NORTHEASTERN UNIVERSITY

Comparative Study of Cooperative and Non-Cooperative
Student Attitudes and Values

Interview Schedule

A. Code Number, Card One _____

B. Sex of Interviewee
Male _____
Female _____

C. Expected year of baccalaureate graduation
1973 _____
1974 _____
1975 _____
1976 _____
1977 _____

D. Sample membership
Co-op _____
Full-time _____

E. Date of interview _____

F. Time interview began _____, concluded _____

G. Signature of Interviewer _____

1. How old are you?

17	_____
18	_____
19	_____
20	_____
21	_____
22	_____
23	_____
24 or older	_____

2. Are you married?

No	_____
Yes	_____

a. If YES, how old is your (wife, husband)?

Not married	_____
Age 17	_____
18	_____
19	_____
20	_____
21	_____
22	_____
23	_____
24	_____
older	_____

b. If YES, what is (his, her) occupation?

Not married	_____
_____	_____

3. Which state do you consider your home state?_____ _____

4. Where do you live while at Northeastern?

At home	_____
College Dormitory	_____
Fraternity or sorority house	_____
Off-campus but not at home	_____

a. If lives in dwelling other than home, how many roommates do you have?

Lives at home	_____
Number roommates	_____

If has step-father, step-mother, or guardian other than own parents with whom has resided for at least five years, the following questions should be answered as if they were biological parents.

5. What is your father's principal type of occupation?

Father dead or not functional part of household for 5 years or longer and no other male guardian _____

_____

_____

Occupation _____

a. How long has your father been in this line of work?

No occupation reported _____
2 or more years _____
less than 2 years _____

b. If less than two years, what was his occupation prior to that time?

Not less than two years or no occupation reported _____

_____

_____

Occupation _____

6. What was the highest grade in school your father completed?

0,1,2,3,4,5,6,7,8, 9,10,11 _____
High School graduate _____
Specialized training school (e.g. auto mechanic, radio repair) _____
Associate degree _____
Baccalaureate degree _____
Graduate or professional school but no degree _____
Graduate or professional degree _____
Don't know _____

a. If your father went to college, where did he go?

No college _____

_____

Where _____

7. Does your mother work?

Mother not living, don't know, or mother not a functional part of household _____
Yes, full-time _____
Yes, part-time _____
No _____

a. If YES, what is her occupation?

No occupation _____

_____ _____ _____

Occupation _____

b. How long has she had this job?

No occupation reported _____
2 or more years _____
Less than two years _____

c. If less than 2 years, did she have a job prior to this one?

Not less than two years or no occupation reported _____
Yes, full-time _____
Yes, part-time _____
No _____

8. What was the highest grade in school your mother completed?

0,1,2,3,4,5,6,7,8, 9,10,11 _____
High School graduate _____
Specialized training school (e.g. secretarial, practical nursing) _____
Some college (no degree) _____
Associate degree _____
Baccalaureate degree _____
Graduate or professional school but no degree _____
Graduate or professional degree _____
Don't know _____

a. If your mother went to college, where did she go?

__ __ _____ _____

No college _____
Where _____

9. An American social scientist has made a study of the United States which indicated that in this country there are four major social classes: the Middle, the Lower, the Working and the Upper social classes. In which of these social classes would you say your family belongs. (If Middle, would you say your family belongs to the Upper-Middle, Middle-Middle, or Lower-Middle social class).

Upper _____
Upper Middle _____
Middle-Middle _____
Lower-Middle _____
Working _____
Lower _____

10. Did you enter Northeastern as a freshman or did you transfer from another college or university?

Freshman _____
Transfer _____

a. If TRANSFERRED, what was your status when you entered?

Did not transfer _____
Freshman _____
Sophomore _____
Middler _____
Junior _____
Senior _____

b. If TRANSFERRED, from what college or university?

__ _____ _____ _____

Did not transfer _____
Transferred from where _____

11. When you entered Northeastern, did you have a fairly clear idea of what you wanted for an academic major?

Yes _____
No _____

a. If YES, what was your intended major at that time?

No _____
What _____

_____

b. If YES, what is your present major?

No _____
What _____

_____

c. If NO, what is your present major?

Yes _____
What _____

_____

12. To what extent has your deciding upon a major involved you in a struggle of conflicting thoughts and feelings?

Very much _____
Moderately _____
Little _____

13. How sure are you that your present choice of major is the most appropriate for you?

Very sure _____
Moderately sure _____
Undecided _____
Moderately unsure _____
Very unsure _____

14. When you entered Northeastern, did you have a fairly clear idea of what career or occupation you wanted for yourself?

Yes _____
No _____

a. If YES, what career or occupation?

No _____
What _____

_____ _____

b. If YES, what is your present plan for a career or occupation?

No _____
What _____

_____

c. If NO, what is your present plan for career or occupation?

Yes _____
What _____

_____

15. Do you plan to go to graduate or professional school after getting your bachelor's degree?

Yes _____
No _____

a. If YES, what field?

No _____
Field _____

_____ _____

b. If NO, what are your plans?

Yes _____
Plans _____

_____

16. a. For each of the following areas, how much have you changed while in college?
    b. How much influence has each of the following agents had in that change?

Key: 1=Little/None
2=Some
3=Very Much

	a. OVERALL CHANGE	B. AGENTS OF CHANGE				
		courses	faculty	fellow students	general maturity	work experience
(1) Development of a world view and personal philosophy.	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-
(2) Development of an interest in new fields of learning.	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-
(3) Development of general thinking skills.	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-
(4) Development of an identity and sense of self-confidence.	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-
(5) Development of social skills.	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-
(6) Development of career plans and skills.	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-	1- 2- 3-

17. Consider to what extent a job or career would have to satisfy each of these requirements before you could consider it an ideal job.

a. Provide an opportunity to use my special abilities or aptitudes.
High _____
Moderate _____
Low _____

b. Provide you with a chance to earn a good deal of money.
High _____
Moderate _____
Low _____

c. Permit you to be creative and original.
High _____
Moderate _____
Low _____

d. Give you social status and prestige.
High _____
Moderate _____
Low _____

e. Give you an opportunity to work with people rather than things.
High _____
Moderate _____
Low _____

f. Enable you to look forward to a stable, secure future.
High _____
Moderate _____
Low _____

g. Leave you relatively free of supervision by others.
High _____
Moderate _____
Low _____

h. Give you a chance to exercise leadership.
High _____
Moderate _____
Low _____

i. Provide you with adventure.
High _____
Moderate _____
Low _____

j. Give you an opportunity to be helpful to others.

High _____
Moderate _____
Low _____

18. What occupation or activity do you think you are likely to be engaged in:

a. Ten years after graduation?

_____ _____

b. Twenty years after graduation?

_____ _____

19. Which of the following experiences or activities have you voluntarily engaged in during your college years?

a. Reading (non-fiction)

Often _____
Occasionally _____
Never or almost never _____

b. Reading (good fiction)

Often _____
Occasionally _____
Never or almost never _____

c. Reading (escape)

Often _____
Occasionally _____
Never or almost never _____

d. Social activities, parties, etc.

Often _____
Occasionally _____
Never or almost never _____

e. Movies

Often _____
Occasionally _____
Never or almost never _____

f. Lectures

Often _____
Occasionally _____
Never or almost never _____

g. Museums, symphony, drama

Often _____
Occasionally _____
Never or almost never _____

h. Civil rights activities in or near school

Often _____
Occasionally _____
Never or almost never _____

i. Civil rights activities in other states

Often _____
Occasionally _____
Never or almost never _____

j. National or community political activities

Often _____
Occasionally _____
Never or almost never _____

k. Campus political activities

Often _____
Occasionally _____
Never or almost never _____

l. Breaking rules for the fun of it

Often _____
Occasionally _____
Never or almost never _____

m. Seeking out off-beat places and people

Often _____
Occasionally _____
Never or almost never _____

n. Service activities off-campus, eg. work with the unemployed, minorities, etc.

Often _____
Occasionally _____
Never or almost never _____

o. Sports activities as a spectator

Often _____
Occasionally _____
Never or almost never _____

p. Sports activites as a participant

Often _____
Occasionally _____
Never or almost never _____

q. Student committees, etc.

Often _____
Occasionally _____
Never or almost never _____

r. Church attendance and/or church related activities

Often _____
Occasionally _____
Never or almost never _____

s. Creative expression: writing, painting, etc.

Often _____
Occasionally _____
Never or almost never _____

t. Travel

Often _____
Occasionally _____
Never or almost never _____

u. Any others - if so what?

Often _____
Ocasionally _____

_____

_____

Often _____
Occasionally _____

20. What three organizations or groups have been most important to you during your college years?

a. _____ _____

b. _____ _____

c. _____ _____

21. Are you now or have you any time since coming to Northeastern been a co-op student and had a cooperative work assignment?

If a Freshman ask: Do you at this time plan to co-op? For remaining parts of Quesion 21, record as though responsed not Co-op.

I am currently a co-op student _____
I have been a co-op student, but not now _____
No, I have never been a co-op student _____
Yes, plan to co-op _____
No, do not plan to co-op _____

a. If currently a co-op student:

(1) How many quarters of co-op work experience have you had?

Number quarters _____
Not co-op _____

(2) How many quarters were you required to live both away from home and away from the University because of the location of your co-op assignment?

Number quarters _____
Not co-op _____

(3) How many quarters of cooperative work would you judge to have been clearly related to your major interests?

Number quarters _____
Not co-op _____

(4) Have you in addition to co-op, worked part-time since being a student at Northeastern?

Yes _____
No _____
Not co-op _____

b. If you have been a co-op student but not any longer:

(1) How many quarters of co-op work experience did you have prior to leaving the program?

Number quarters _____
Now co-op or never co-op _____

(2) How many quarters were you required to live both away from home and away from the University because of the location of your co-op assignment?

Number quarters _____
Now co-op or never co-op _____

(3) How many quarters of cooperative work would you judge to have been clearly related to your major interests?

Number quarters _____
Now co-op or never co-op _____

(4) Have you in addition to co-op, worked part-time since being a student at Northeastern?

Yes _____
No _____
Now co-op or never co-op _____

c. If you have never been a co-op student:

(1) Did you work during the summer after your freshman year?

Yes _____
No _____
Currently Freshman _____
Am or was co-op _____

(2) Did you work during the summer after your sophomore year? (If appropriate)

Yes _____
No _____
Currently Sophomore _____
Am or was co-op _____
Not appropriate _____

(3) Did you work during the summer after your junior year? (If appropriate)

Yes _____
No _____
Currently Junior _____
Am or was co-op _____
Not appropriate _____

(4) Have you worked part-time during the academic year since being at the University?

Yes _____
No _____
Am or was co-op _____

22. In thinking over your experiences in college up to now, to what extent do you feel that you have made progress or been benefited in each of the following respects:

a. Awareness of different philosophies, cultures and ways of life

Very much _____
Quite a bit _____
Some _____
Very little _____

b. Broadened literary acquaintance and appreciation

Very much _____
Quite a bit _____
Some _____
Very little _____

c. Aesthetic sensitivity...appreciation and enjoyment of art, music, drama	Very much Quite a bit Some Very little	_____ _____ _____ _____
d. Writing and speaking...clear, correct, effective communication	Very much Quite a bit Some Very little	_____ _____ _____ _____
e. Personal development...understanding one's abilities and limitations, interests, and standards of behavior	Very much Quite a bit Some Very little	_____ _____ _____ _____
f. Development of friendships and loyalties of lasting value	Very much Quite a bit Some Very little	_____ _____ _____ _____
g. Appreciation of individuality and independence of thought and action	Very much Quite a bit Some Very little	_____ _____ _____ _____
h. Social development...experience and skill in relating to other people	Very much Quite a bit Some Very little	_____ _____ _____ _____
i. Tolerance and understanding of other people and their views	Very much Quite a bit Some Very little	_____ _____ _____ _____
j. Appreciation of religion...moral and ethical standards	Very much Quite a bit Some Very little	_____ _____ _____ _____
k. Background and specialization for further education in some profession, scientific or scholarly field	Very much Quite a bit Some Very little	_____ _____ _____ _____

l.	Basis for improved social and economic status	Very much _____ Quite a bit _____ Some _____ Very little _____
m.	Vocabulary, terminology, and facts in various fields of knowledge	Very much _____ Quite a bit _____ Some _____ Very little _____
n.	Vocational training...skills and techniques directly applicable to a job	Very much _____ Quite a bit _____ Some _____ Very little _____
o.	Reasoning ability...recognizing assumptions, making logical inferences, and reaching correct conclusions	Very much _____ Quite a bit _____ Some _____ Very little _____
p.	Ability to see relationships, similarities and differences between ideas	Very much _____ Quite a bit _____ Some _____ Very little _____
q.	Understanding the nature of science, experimentation, and theory	Very much _____ Quite a bit _____ Some _____ Very little _____
r.	Skepticism...ability to withhold judgment, raise questions, and examine contrary views	Very much _____ Quite a bit _____ Some _____ Very little _____
s.	Quantitative thinking...understanding concepts of probablity, proportion, margin of error, etc.	Very much _____ Quite a bit _____ Some _____ Very little _____

23. Which of the following activities have you engaged in during the past year?

a.	I talked about new books (not textbooks) with my friends.	Yes _____ No _____

b. I bought books for my personal library. Yes _____ No _____

c. I read one or more contemporary novels. Yes _____ No _____

d. I read book reviews in the newspapers or magazines at least once a month. Yes _____ No _____

e. I read poetry (not assigned for a course). Yes _____ No _____

f. I read for personal interest at least one book a month. Yes _____ No _____

g. I attended a lecture given by a novelist, critic, poet, or playwright. Yes _____ No _____

h. I wrote an essay, story, play, poem, etc., for publication. Yes _____ No _____

i. I attended church services one or more times. Yes _____ No _____

j. I discussed ideas, practices, or problems of religion with my friends. Yes _____ No _____

k. I belonged to a church. Yes _____ No _____

l. I read articles about church or religious activities in the newspapers or magazines. Yes _____ No _____

m. I observed religious rituals in my home (said grace before meals, lit my candles on the Sabbath, etc.). Yes _____ No _____

n. I contributed a regular sum of money to the church. Yes _____ No _____

o. I attended one or more church functions held during the week. Yes _____ No _____

p. I read one or more books (not textbooks) about religion. Yes _____ No _____

q. I did some volunteer work for my church. Yes _____ No _____

r. I discussed international relations, foreign policy, the U. N., etc. with my friends. Yes _____ No _____

s. I talked with my friends about people and cultural events in other countries. Yes _____ No _____

t. I saw one or more foreign movies. Yes _____ No _____

u. I read one or more books (not textbooks) by authors from another country. Yes _____ No _____

v. I went to a concert, theater, or exhibition which featured the art, music, or drama of another country. Yes _____ No _____

w. I participated in efforts to improve understanding between countries, races, or ethnic groups. Yes _____ No _____

x. I entertained a visitor from another country. Yes _____ No _____

y. I contributed time or money for some international group or project. Yes _____ No _____

z. I listened attentively to radio music at home or in my car. Yes _____ No _____

aa. I talked about music with my friends. Yes _____ No _____

bb. I bought phonograph records. Yes _____ No _____

cc. I attended one or more concerts of contemporary folk music, rock, jazz, etc. Yes _____ No _____

dd. I listened to some serious music by contemporary composers. Yes _____ No _____

ee.	I read reviews of musical performances or new record releases in the newspapers or magazines.	Yes No	_____ _____
ff.	I attended one or more symphony, opera, or chamber music concerts.	Yes No	_____ _____
gg.	I played a musical instrument.	Yes No	_____ _____
hh.	I participated in some vocal or instrumental group - choir, orchestra, or other group.	Yes No	_____ _____
ii.	I discussed political issues with my friends.	Yes No	_____ _____
jj.	I listened to speeches, news specials, discussion programs, etc. about political issues on TV or radio, weekly or monthly.	Yes No	_____ _____
kk.	I read magazine articles about state and national problems weekly or monthly.	Yes No	_____ _____
ll.	I followed state and national political events regularly in my newspaper.	Yes No	_____ _____
mm.	I read one or more books about politics.	Yes No	_____ _____
nn.	I signed a petition, wrote a letter, card, or telegram concerned with some political issue.	Yes No	_____ _____
oo.	I attended meetings of a political club or party.	Yes No	_____ _____
pp.	I participated in a public protest or rally over some political issue.	Yes No	_____ _____
qq.	I did some volunteer or paid work for a political party.	Yes No	_____ _____
rr.	I talked with an elected official about some problem (national or state).	Yes No	_____ _____

24. As you read each of the following words, what sort of associations come to mind? Are these impromptu and immediate associations to the word generally positive; generally negative; or mixed?

	positive	mixed	negative
a. Spirituality			
b. Perspective			
c. Idealism			
d. Altruism			
e. Mysticism			
f. Reverence			
g. Freedom			
h. Spontaneity			
i. Creativity			
j. Calculation			
k. Planning			
l. Prudence			
m. Loyalty			
n. Tradition			
o. Organization			
p. Obedience			
q. Self-sacrifice			

24. (continued)

	positive	mixed	negative
r. Justice	___	___	___
s. Participation	___	___	___
t. Perceptiveness	___	___	___
u. Sensory awareness	___	___	___
v. Moderation	___	___	___
w. Thoughtfulness	___	___	___
x. Flexibility	___	___	___
y. Salvation	___	___	___
z. Righteousness	___	___	___
aa. Worship	___	___	___
bb. Dignity	___	___	___
cc. Submission	___	___	___
dd. Revelation	___	___	___

25. Do you agree or disagree with the following statements?

a. What young people need most of all is strict discipline from parents.
- Agree quite a bit _____
- Agree a little _____
- Disagree _____

b. Most people who don't get ahead just don't have enough will power.
- Agree quite a bit _____
- Agree a little _____
- Disagree _____

c. A few strong leaders could make this country better than all the law and talk.
- Agree quite a bit _____
- Agree a little _____
- Disagree _____

d. People sometimes say that an insult to honor should not be forgotten. Do you agree or disagree with that?
- Agree quite a bit _____
- Agree a little _____
- Disagree _____

26. Generally speaking, would you say that most people can be trusted or that you can't be too careful in dealing with people?
- Most people can be trusted _____
- Can't be too careful _____

27. Would you say that most of the time people try to be helpful, or that they are mostly just looking out for themselves?
- Try to be helpful _____
- Look out for themselves _____

28. Do you think that most people would try to take advantage of you if they go the chance or would they try to be fair?
- Take advantage _____
- Try to be fair _____

29. The following express viewpoints that some people agree with and others don't. What is your viewpoint?

a. The most serious and widespread acts of violence against society and humanity are being committed by government and industry -- war, pollution, destruction of natural resources, urban blight, etc.
- Strongly Agree _____
- Agree _____
- Disagree _____
- Strongly Disagree _____

b. A society that is more concerned about law and order than about liberty and justice is basically repressive.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

c. Crime in the streets is a relatively small problem compared with crime or unethical practices in business such as false advertising, shoddy products, bribery, inside "deals" etc.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

d. Science, and the technology resulting from it, has created problems and dangers that cannot be solved by more science and technology.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

e. Achieving, doing, accumulating possessions, making money, gaining status and influence, etc., are values or questionable importance or desirability.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

f. Reason, logic, abstract thought, and similar rational modes of analysis are sometimes inappropriate ways of gaining insight and understanding.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

g. A sense of mystery, and the direct quality of experience and feeling are values that should be more highly cherished in our society.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

h. To what extent have any of your experiences in school (classroom, conversation, reading, etc.) led you to think about and develop your views of these topics?

Very Much _____
Quite a Bit _____
Some _____
Very Little _____

i. If Very Much or Quite a Bit for h:

In addition to your experiences in school, what other source has been especially important in developing your views on these topics.

_____ _____

_____

Not Very Much or Quite a bit for h _____
Source in addition _____

j. If Some or Very Little for h:

If your experiences is school were not too important in developing your views on these topics, what source has been especially important?

_____

_____

Not Some or Very little for h _____
Source instead _____

k. Regardless of where your views may have been acquired, to what extent do they reflect knowledge and serious thought on your part?

Very Much _____
Quite a Bit _____
Some _____
Very Little _____

30. Here are some statements. What is your viewpoint on them?

a. If Blacks live poorly, it is in great part the fault of discrimination and neglect from Whites.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

b. Anyone, no matter what his color, who is willing to work hard can get ahead in life.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

c. More money and effort should be spent on education, welfare, and self-help programs for the culturally disadvantaged.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

d. In the long run, school integration will contribute to the health of our society and to the quality of education.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

e. Qualifications and standards should be modified, temporarily, in order to get large numbers of people from minority groups into the professions -- doctors, lawyers, engineers, bankers, etc.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

f. Members of minority groups, compared with the majority of citizens, have not usually received and do not now receive equal treatment from the police and the courts.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

g. To what extent have any of your experiences in school (classroom, conversation, reading, etc.) led you to think about and develop your views on these topics?

Very Much _____
Quite a Bit _____
Some _____
Very Little _____

h. If Very Much or Quite a Bit for g:

In addition to your experiences in school, what other source has been especially important in developing your views on these topics?

Not Very Much or Quite a Bit for g _____
Source in addition _____

_____

_____

i. If Some or Very Little for h:

If your experiences in school were not too important in developing your views on these topics, what source has been especially important?

Not Some or Very Little for h _____
Source instead _____

j. Regardless of where your views may have been acquired, to what extent do they reflect knowledge and serious thought on your part?

Very Much _____
Quite a Bit _____
Some _____
Very Little _____

31. Here is still a further set of statements. What is your viewpoint on them?

a. Professional women should have the same benefits and opportunities as their male colleagues.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

b. Family patterns and attitudes should allow, and often encourage, married women to follow their own interests, even if they have young children.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

c. More women should be involved in policy formation both in business and government.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

d. In families where the mother spends little time at home there is generally a bad effect on the young children.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

e. Birth control methods, including abortion, should be available to any woman who wants them.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

f. Glamorous advertising, beauty contests, and similar portrayals of women perpetuate the concept of women as submissive and security-seeking rather than as independent, self-reliant human beings.

Strongly Agree _____
Agree _____
Disagree _____
Strongly Disagree _____

g. To what extent have any of your experiences in school (classroom, conversation, reading, etc.) led you to think and develop your views on these topics?

Very Much _____
Quite a Bit _____
Some _____
Very Little _____

h. If Very Much or Quite a Bit for g:

In addition to your experiences in school, what other source has been especially important in developing your views on these topics.

Not Very Much or Quite a Bit for g _____
Source in addition _____

_____

_____

i. If Some or Very Little for h:

If your experiences in school were not too important in developing your views on these topics, what source has been especially important?

Not Some or Very Little for h _____
Source instead _____

_____

_____

j. Regardless of where your views may have been acquired, to what extent do they reflect knowledge and serious thought on your part?

Very Much _____
Quite a Bit _____
Some _____
Very Little _____

32. I'm going to give you a number of cards on each of which is presented some human need. People think some are more important than others. I'd like you to rank these human needs in order of importance you think they have for most people by arranging the cards. _____

a. Love and affection..... _____
b. Emotional well-being..... _____
c. Maintaining self-respect..... _____
d. Being accepted..... _____
e. Achievement..... _____
f. Curiosity and knowledge..... _____
g. Sexual needs..... _____
h. Wealth..... _____
i. Play and recreation..... _____
j. Fame and recognition..... _____
k. Sensory and aesthetic pleasure..... _____

33. By arranging this set of cards, rank in order the interests and activities they present according to the relative degree of importance you expect them to have in your life after graduation from Northeastern.

a. Career or occupation..... _____
b. Love and affection..... _____
c. Relations and activities with future family..... _____
d. Developing personal identity..... _____
e. Intellectual and artistic activities..... _____
f. Time for thinking and reflection..... _____
g. Helping other people..... _____
h. Sexual needs..... _____
i. Participation in activities directed toward national or international betterment..... _____
j. Religious beliefs and activities..... _____
k. Social life and entertainment..... _____
l. Participation as a citizen in the affairs of your community..... _____
m. Sports..... _____
n. Home improvement..... _____

34. How much do you feel you have changed since you entered college in regard to the following characteristics?

a. Efficiency as a student
Little ____
Moderate ____
Much ____

b. Intellectual interests
Little ____
Moderate ____
Much ____

c. Personal characteristics
Little ____
Moderate ____
Much ____

d. Kinds of friends you have
Little ____
Moderate ____
Much ____

e. Freedom to express your thoughts and feelings
Little ____
Moderate ____
Much ____

f. Moral views
Little ____
Moderate ____
Much ____

g. Religious views
Little ____
Moderate ____
Much ____

h. Political views
Little ____
Moderate ____
Much ____